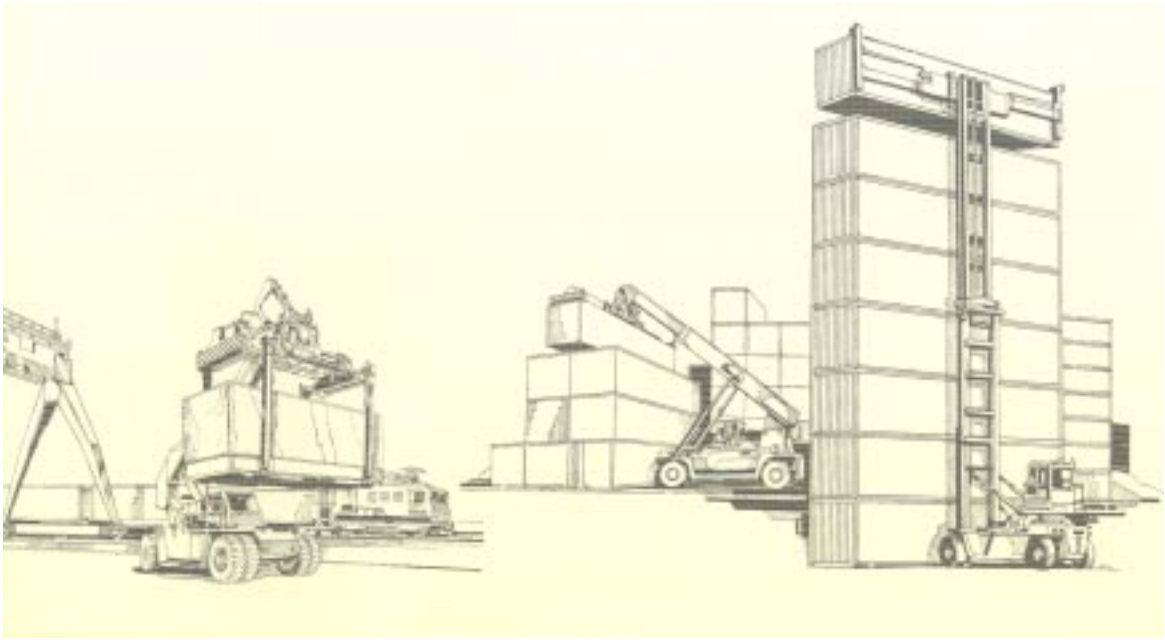
ELME SWEDISH SPREADER SYSTEMS

ELMHULTS KONSTRUKTIONS AB

SERVICE AND PARTS MANUAL

MODEL
817

MANUAL NO
1-1202



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SERVICE MANUAL

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Section B **Service manual**

Section C **Diagrams**

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SECTION

A

USER INSTRUCTION

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ELME CONTAINER SPREADER

Model No. 817

DRIVER INSTRUCTIONS

The ELME Model 817 Container spreader is a technically advanced piece of equipment which, if it is carefully used and maintained will serve its purpose for many years.

Initial check.
Each work shift should be started by making a visual check of the unit (this must be part of the daily routine.) Possible damage will in this way be discovered at an early stage thus enabeling repairs to be carried out at much lower cost.
NEVER USE THE UNIT UNLESS ALL SAFETY DEVICES FUNCTION CORRECTLY !!!

CONTAINER HANDLING

1 Starting work with the spreader.
First of all the length of the spreader must be adjusted to the size of container that is required to be lifted. This is done by retracting the stops (if fitted) and then activating the extention lever or button in order to extend or retract the spreader beams to the desired length.

NOTE ! it is important to remember that loads should only be lifted at the specified lengths for which the spreader is designed ie. 20ft. 30ft. 35ft.40ft and in some cases 45ft. Where stops are fitted the stops should be used to position the beams accuratly at one of the above mentioned positions. If the spreader is not equipped with stops then the spreader may only be used for lifting 20 and 40ft. containers. Lifting outside the specified positions can result in serious damage to the spreader.

When the required length has been reached , lift the spreader high enough to give good visibility under it. This serves two purposes, 1 it gives good visibility for travelling and 2 it positions the spreader ready for picking up the first container. The spreader should now be side shifted to the center position and the reach function operated to the fully retracted position. This will be termed **"THE BASIC POSITION"** in the rest of the instruction.

2. Picking up a container.
If necessary raise the spreader in order to have plenty of space between it and the container. Always attempt to position the spreader centrally over the container.
The final adjustments for lining up the twist locks with the corner castings of the container can now be made.

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By using the controls for shift and reach, position the spreader accurately over the corner castings and then lower the spreader into them. If the twist locks or some of the twist locks do not fit into the corner castings properly, CAREFULLY lift the spreader just free of the container, readjust its position and the try again. **NEVER PUSH OR SIDE SHIFT** while any of the twist locks are still engaged in the corner castings of the container. When all the twist locks are correctly engaged in the corner castings the spreader should be lowered until it rests unsupported on the container, this is termed as the spreader being correctly **SEATED,** and this will be indicated by the SEATED LIGHT being switched on. As soon as this happens the twist locks can be activated to the locked position and the LOCKED LIGHT will be switched on.
CHECK THAT THE "LOCKED" LIGHT HAS BEEN SWITCHED ON and then lift the container to the required height for loading and / or travelling. Before moving the container, return the spreader to the "BASIC POSITION". The container is now ready to be transported to a new location. When travelling always keep the load at the lowest possible height and drive carefully.

3. Depositing a container.
When approaching the new location for the container (this could be a chassis or a stack etc.) lower the container to the required height and adjust the position of the corner castings so that they are accuratly situated above the corner locks of the chassis. Lower the container ensuring that its corner castings locate on the corner locks.

NEVER USE MORE TILT THAN NECESSARY AND NEVER PUSH !!!

WARNING !!! A heavy container and the weight of a spreader will do serious damage to a trailer or chassis if not handled with care.

The twist locks may now be activated to the "UNLOCKED" position, the spreader lifted free of the container and the truck backed away.

4. General advice
- Always adjust the spreader back to the **"BASIC POSITION"** after every handling cycle.

- When parking the truck and spreader or when they are not in use for longer periods of time, always make a habit of lowering the spreader to its lowest position.

- Read all instruction books carefully and be sure that you understand them.

- Should there be anything you do not understand, then contact your local dealer who will ensure that all your questions are answered.

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SECTION

B

SERVICE MANUAL

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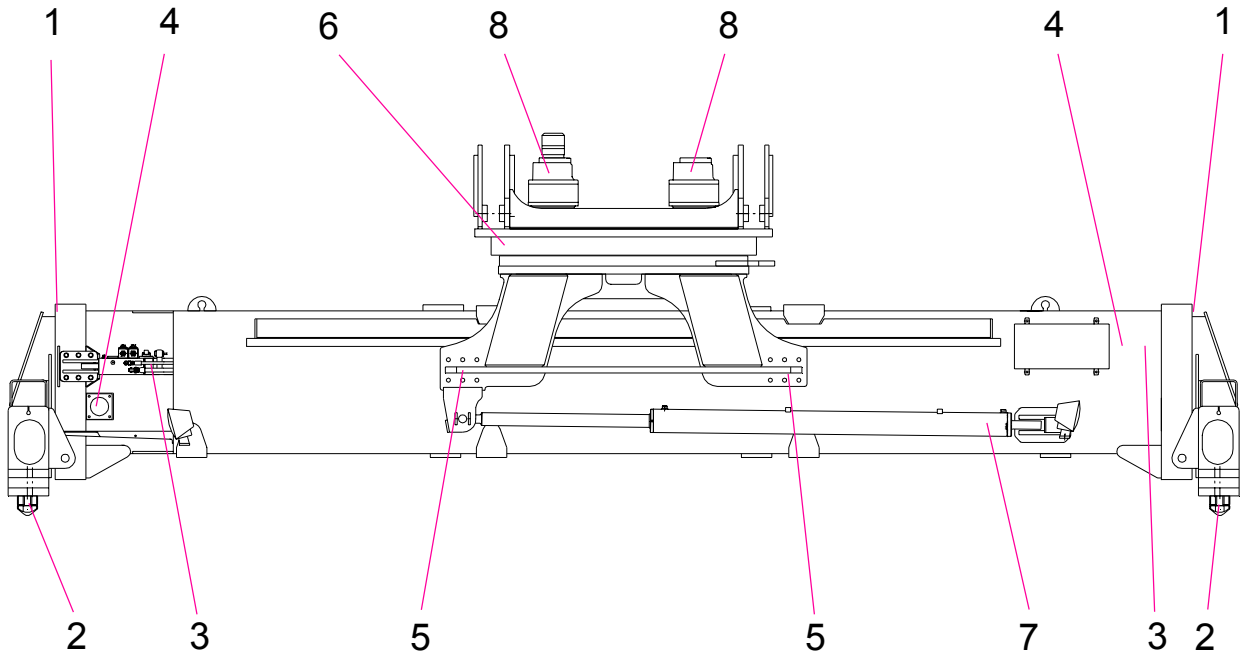
LUBRICATION CHART
for Model 817



WHERE GREASE IS RECOMMENDED USE MULTI PURPOSE GREASE WITH 2-4 % MOLYBDENEM DISULFIDE ADDITIVE.

1 Slider pads extension
2 Twist locks
3 Extension cylinder
4 Stops
5 Slider pads side shift
6 Slewing ring bearing and gear
7 Side shift cylinders.
8 Slew gear box and brake
(See individual description of each lubrication point.)

POSITION 1

WEAR PADS FOR MAIN BEAMS AND EXTENDING BEAMS

NO. OF GREASE POINTS 24.

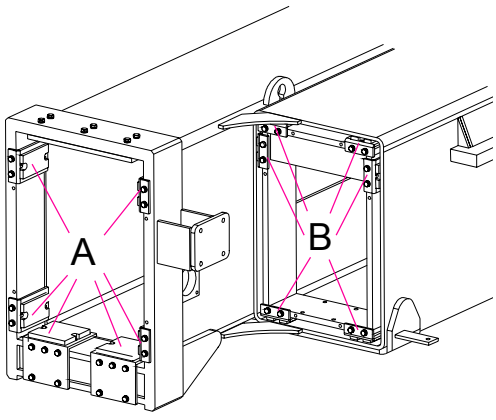
INTERVAL - EVERY 500 HOURS OR 3 MONTHS.

6 TRACKS ON EACH EXTENDING BEAM.

6 TRACKS ON THE INSIDE OF EACH MAIN BEAM.

(SEE ARROWS "A" AND "B")

LUBRICANT - MULTI PURPOSE GREASE



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POSITION 2

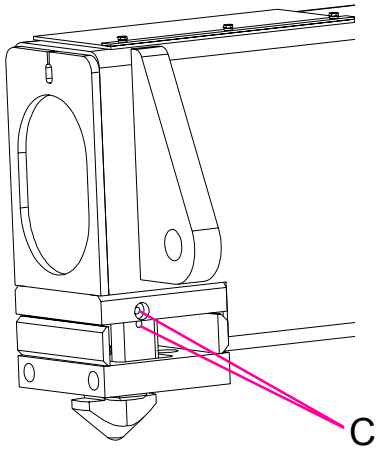
END BEAMS AND TWIST LOCKS.

NO. OF GREASE POINTS 8.

INTERVAL - EVERY 500 HOURS OR 3 MONTHS.

1 GREASE NIPPLE IN EACH END BOX.
1 GREASE NIPPLE IN EACH SLEEVE

LUBRICANT - MULTI PURPOSE GREASE



POSITION 3

EXTENSION CYLINDER SUPPORT WEAR PADS

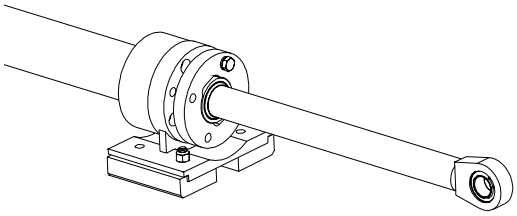
AND TRACKS.

INTERVAL - EVERY 1000 HOURS OR 6 MONTHS

NO. OF GREASE POINTS 4.

2 TRACKS IN EACH EXTENSION BEAM.

LUBRICANT - MULTI PURPOSE GREASE.



POSITION 4

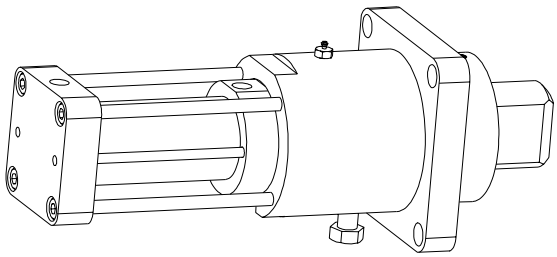
STOP CYLINDERS.

NO. OF GREASE POINTS 2.

INTERVAL - EVERY 500 HOURS OR 3 MONTHS.

POINTS. 1 GREASE NIPPLE ON EACH STOP CYLINDER.

LUBRICANT - MULTI PURPOSE GREASE



POSITION 5

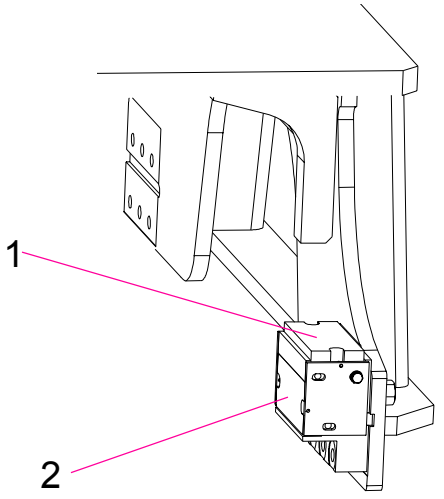
SIDE SHIFT SLIDER PADS

NO. OF GREASE POINTS 4

INTERVAL - EVERY 500 HOURS OR 3 MONTHS

POINTS. 2 TRACKS ON EACH SIDE OF THE SPREADER

LUBRICANT - MULTI PURPOSE GREASE.



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POSITION 6

SLEWING RING BEARING AND GEAR.

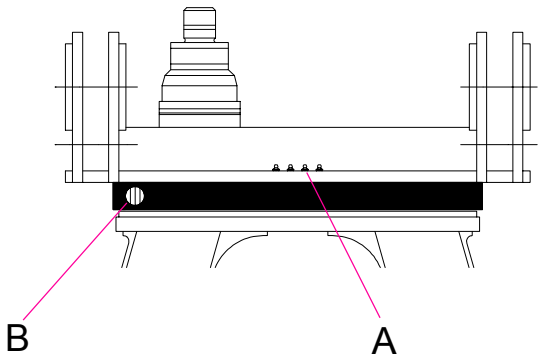
INTERVAL - EVERY 100 HOURS OR MONTHLY

NO. OF LUBRICATION POINTS 6.

4 GREASE NIPPLES POSITION "A" MOUNTED AT ONE CENTRAL POINT ON THE UPPER ROTATOR FRAME PLATE FOR GREASING THE BEARING.

2 HOLES AT POSITION "B" IN THE STOP BLOCKS FOR SPRAYING LUBRICATION ONTO THE GEAR RING WITH A SPRAY CAN OF SPECIAL GREASE.

LUBRICANT. - "A" MULTI PURPOSE GREASE.
"B" EXPOSED GEAR LUBRICANT WITH ADHESIV AND EP ADDITIVE



POSITION 7

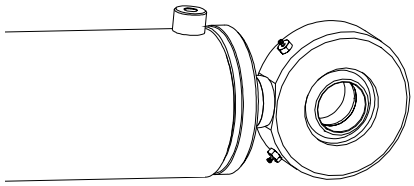
SIDE SHIFT CYLINDER BEARINGS.

INTERVAL - EVERY 500 HOURS OR 3 MONTHS

NO. OF GREASE POINTS 4.

2 GREASE NIPPELS ON EACH CYLINDER TUBE BEARING.

LUBRICANT. - MULTI PURPOSE GREASE



POSITION 8

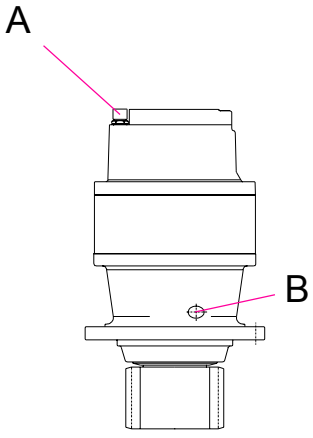
SLEWING GEARBOX (2 off)

NO. OF POINTS - 2.

INTERVAL - CHECK OIL LEVEL EVERY 100 HOURS OR MONTHLY.
CHANGE OIL AFTER THE FIRST 50 HOURS OF OPERATION AND THEN EVERY 2000 HOURS OR YEARLY.

POINTS. - PLUG "A" IN ELBOW AT TOP OF GEARBOX = FILLER AND LEVEL PLUG.
PLUG "B" IN THE BOTTOM OF THE BOX = DRAIN PLUG.

LUBRICANT. - SAE 90 GEAR OIL.



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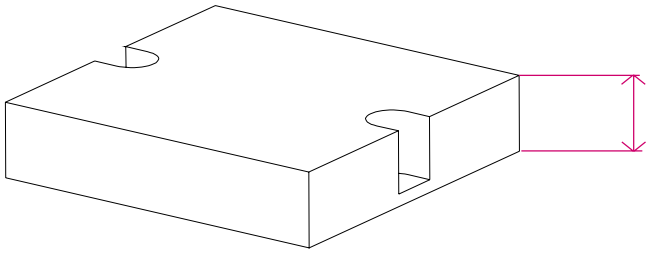
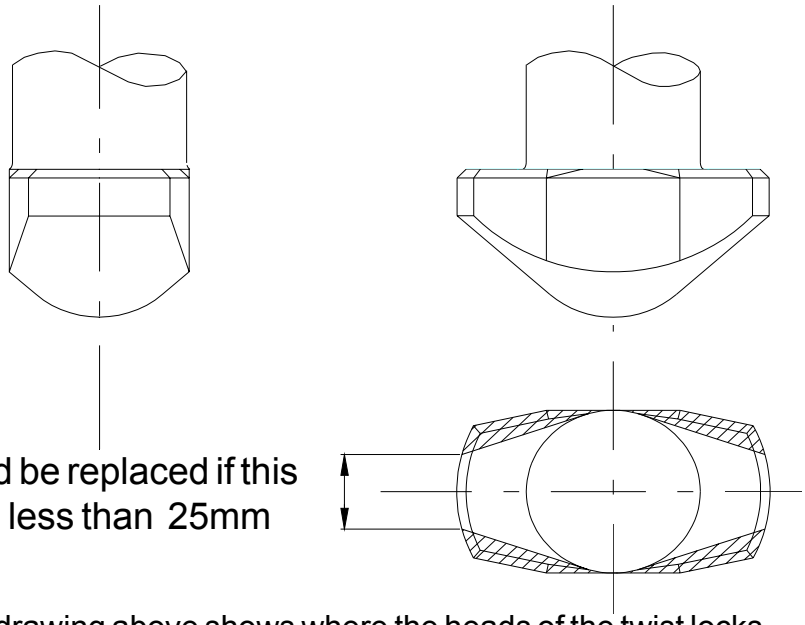
GENERAL MAINTENANCE INSTRUCTIONS.

1. - The nylon wear pads should be inspected for wear at the same time as their tracks are lubricated. The pads should be replaced when their thickness is reduced to minimum 18 mm.
Replacing the wear pads can be done with ordinary hand tools and without removing the beams.



Minimum thickness 18 mm

2. - Twist locks are wearing parts and need inspecting on a regular basis. Lubrication of the twist locks is recommended at monthly intervals and it is also recommended that they are inspected for wear and damage at the same time.



Should be replaced if this dim. is less than 25mm

The drawing above shows where the heads of the twist locks wear. When the worn part exceeds the area indicated by cross hatching the twist locks should be replaced.

Generally it is recommended that twist locks be replaced after a max. use of 5000 working hours.

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3. - The extension cylinder support has wear pads under it. These should also be inspected on a regular basis and replaced when their thickness is reduced to minimum 18 mm. See item 1.

4. - Maintenance of the stop cylinders if fitted, consists of checking all mounting bolts for tightness and inspection for leakage from the cylinder.

5 - The side shift wear pads should be inspected for wear at the same time as lubrication is carried out. The wear pads should be replaced when their thickness is reduced to minimum 18 mm. See item 1.

6. - Other recommended spreader maintenance is:

   a - Inspect the main spreader components for damage, cracks and distortion.

   b - Check the signal and safety systems for correct operation.

   c - Check the hydraulic pressures periodically.

   d - Check all hydraulic cylinders for leakage and reseal if necessary.

   e - Inspect all hydraulic hoses for damage and leakage. Replace if faulty.

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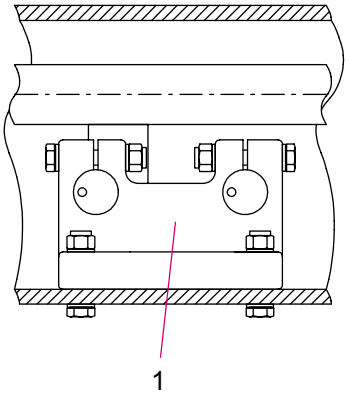
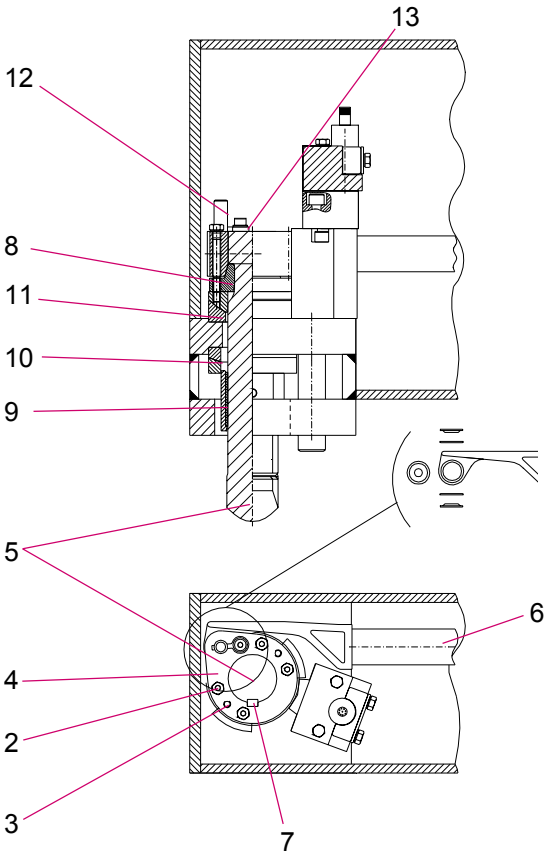
SERVICING THE PENDULAR TWISTLOCK

The tie-rod is a fixed unit and is not adjustable.





To remove the tie-rod proceed as follows:

1 Remove the Locked / Not locked sensor bracket (item 1).

2 Loosen one of the adjuster bolts at the twistlock cylinder, enough to give some play.

3 Loosen and remove the M8 x 80 bolts (item 2) in the top of both twistlocks in the same end beam.

4 Use two of the M8 x 80 bolts (item 2) as pullers by inserting them in the two threaded holes (item 3) in each of the cranks (item 4) and tighten them alternatly until they lift the cranks (item 4) off the top of the twistlock shaft (item 5).

5 The tie-rod (item 6) including both cranks (item 4) can now be removed from the end beam.

To remove the twistlock and sleeve proceed as follows:

6 The key (item 7) that locates the crank (item 4) to the twistlock (item 5) is held in place on the twistlock by a roll pin so that it will remain in place on the twistlock after the crank is removed.
By lightly knocking the key away from the twistlock it can be removed.

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7 Support the twistlock (item 5) from below so that it does not drop out.
Using a screwdriver prise the collets (item 8) out of the recess in the twistlock (item 5). It is now possible to lower the twistlock out of the end beam. The sleeve (item 9) and lower bearing set (item 10) will in most cases accompany the twist lock as it is removed, this is quite normal.

INSPECTION PRIOR TO REASSEMBLY

8 After removal of all twistlock parts remove all grease and dirt from the parts and also from the corner of the end beam. Steam clean or clean with some form of solvent.

9 Check the twistlock (item 5) for wear at the head and also for wear at the bushing surfaces. Inspect the lower (item 10) and upper (item 11) bearing sets for wear and damage, if badly worn or damaged they should be replaced. The collets (item 8) and the crank (item 4) should be inspected for possible wear or damage and replaced if necessary. **It should be noted that the state of the collets (item 8) and the recess in the twist lock (item 5) is very important as these parts are carrying the load when a container is lifted.**

REPLACING / FITTING TWISTLOCKS

10 Replacing the twistlock is the revers order of removal, however the best way to start assembly is to assemble the sleeve (item 9) including bushes, onto the twistlock (item 5) and then grease the the lower bearing set (item 10) and place in position on top of the sleeve. Fit the four centering springs in the sides of the sleeve.

11 Grease the upper bearing set (item 11) and place in position on the top surface of the corner plate (in the end beam) with the convex half uppermost (threaded holes up)

12 Lift the twistlock assy. as assembled in point 10 and position up through the corner plate in the end beam, ensuring that the upper bearing set (item 11) is positioned correctly around the twistlock. Support the assembly with a jack or other means and then go to the next point.

13 Fit the collets (item 8) with the pointed part upwards.

14 Fit the key (item 7) incl. roll pin to the keyway of the twistlock (item 5)

15 In order to fit the tie-rod (item 6) it is necessary to mount both cranks (item 4) to the tie-rod before placing it in the end beam. Fit the ball joints, O rings, and plastic washers to the tie-rod ends and then fit the fork of the crank (item 4) over the tie-rod end. Ensure that the countersunk ends of the securing holes in the crank are uppermost. Secure the crank to the tie-rod end by fitting the pin (item 12) and then the ring pin and allen screw.

16 In order to simplify assembly of the crank to the twistlock it is advisable to fit two alignment pins to the assy. The pins can be made from two M8 x 75 bolts or allen screws with the heads removed and slightly chamfered.
These pins should be screwed into the top plate of the upper bearing (item 11) diagonally so that each pin guides one half of the collets (item 8).

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17 Insert the tie-rod (item 6) into the end beam and the fit the cranks (item 4) onto the alignment pins and ensure that the key and keyway line up. Fit two of the allen securing (item 2) in the remaining two holes and screw in and tighten lightly. Remove the alignment pins and fit the other two securing screws. The securing screws can now be tightened to approx. 25 Nm.

18 Activate the twistlocks to the NOT LOCKED position and then adjust the twistlock cylinder adjuster bolts so that the twistlocks are positioned accuratly in the NOT LOCKED posi tion. Ensure that there is Zero play between the adjuster bolts and the twistlock cylinder rod ends.

19 Grease the complete assembly with a high pressure grease gun.

In order to test the operation it is necessary to land the spreader on a container so that the seated pins are activated.

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Removal and fitting instructions
for the spreader extension cylinders.

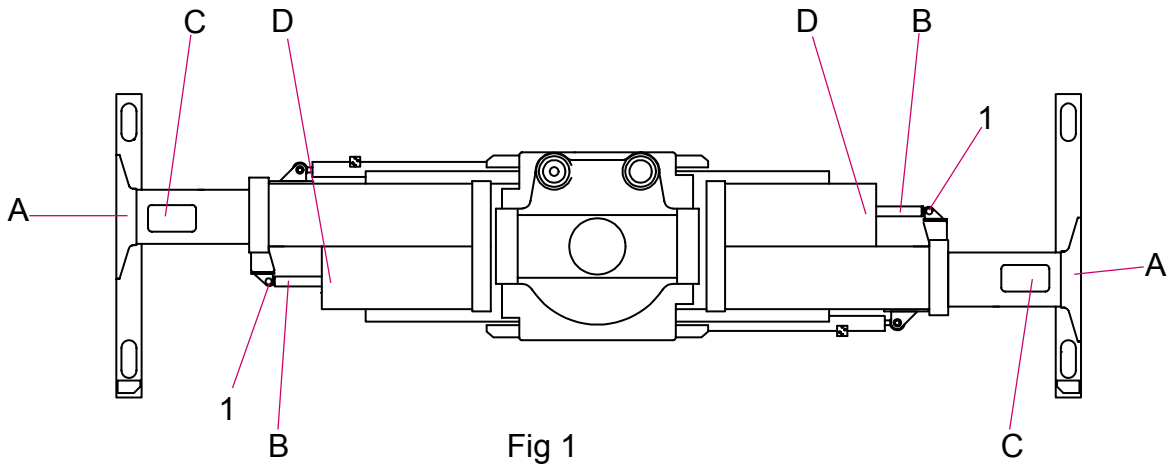

Fig 1

A	Extension beams
B	Extension cylinder
C	Inspection hole
D	Hose / Cable chain

1 - Retract the spreader to the 20ft position

2 - Before removing the securing pin pos.1 of the extension cylinder it must be supported by a small hydraulic jack or likewise so that the cylinder pos. B does not fall down.
Remove the pin from the rear of the cylinder fig1 pos 1 (opposite end to the piston rod) and at the same time also remove the hose and electrical connections at the rear of the extension cylinder pos. B. The securing bracket that secures the cable chain to the track in the bottom of the extension beam should also be disconnected.

3 - By using a crane or fork lift truck pull the end beam pos. A out approx. 50cm so that it is just possible to get into the inspection hole pos.C in the top of the beam.

4 - Remove the pin from the piston rod end of the extension cylinder.

5 - The extension cylinder pos. B can now be lifted out of the spreader by sliding it horisontally with the help of suitable lifting equipment, (by "suitable lifting equipment" is meant that the crane or truck must be capable of lifting 150kg .) until the slider pads slide out of the rail by which the foot of the cylinder is guided.

6 - Replacing the cylinder is the revers procedure of the removal.

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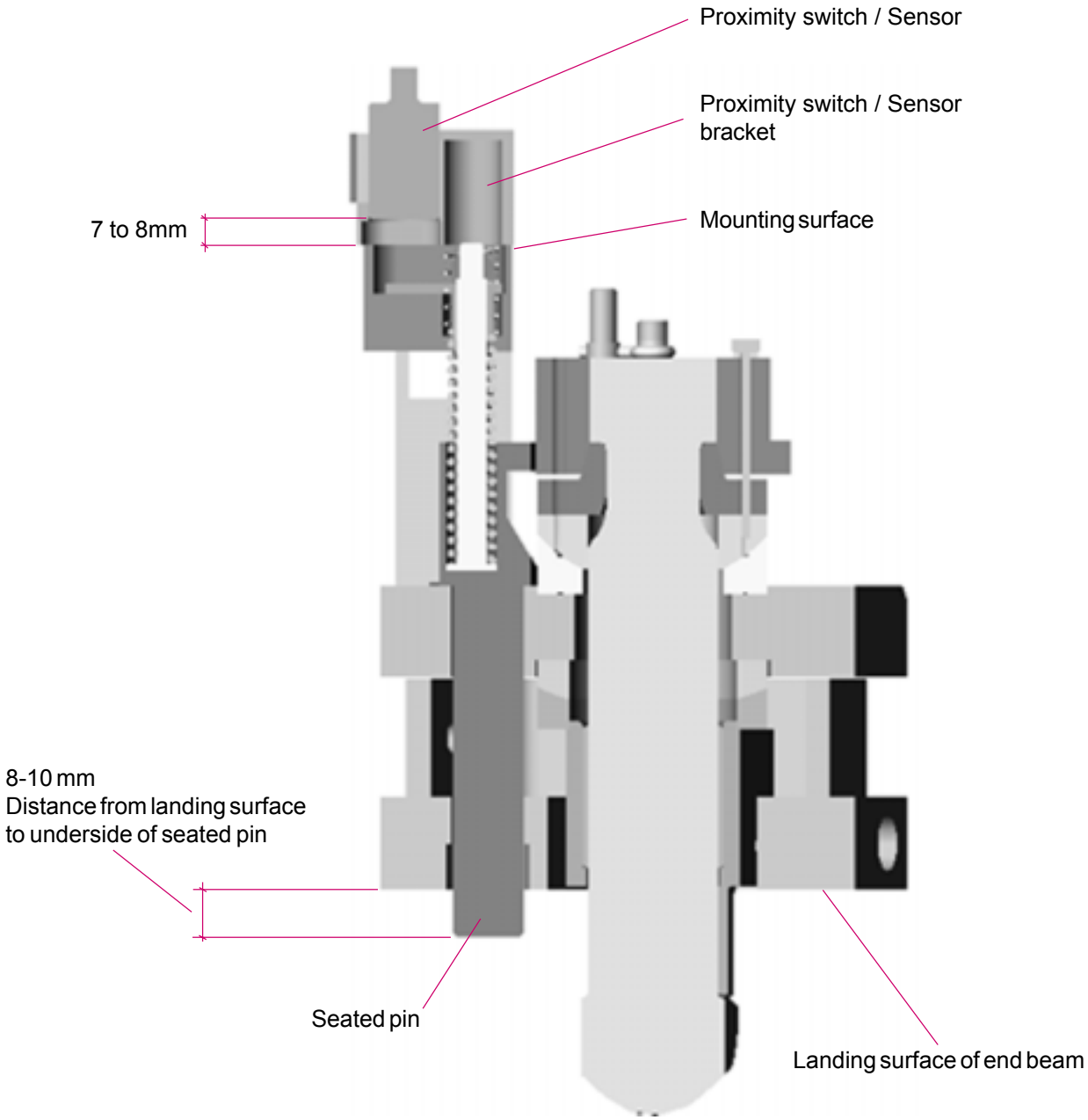
Proximity switch / Sensor
Proximity switch / Sensor bracket
7 to 8mm
Mounting surface
8-10 mm
Distance from landing surface to underside of seated pin
Seated pin
Landing surface of end beam

SEATED / LANDED signal adjustment

1. Check that the SEATED PIN can move up and down freely. The force needed to lift the pin is approx. 10 kg (20 lbs).

2. The SEATED signal should switch on with the pin protruding approx. 9mm below the landing surface of the end beam.

3. If adjustment of the proximity switch / sensor is necessary, remove the seated sensor mounting bracket incl. sensor from the top of the seated tower, and adjust the proximity switch / sensor so that the end surface is 7-8 mm above the lower mounting surface of the bracket. This adjustment will result in the seated pin indication being switched on when the underside of the seated pin is approx. 8 to10mm lower than the end beams landing surface. This adjustment also ensures that the mechanical and electrical lockout is released so that the twistlocks can be turned.

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09-03,05-03)

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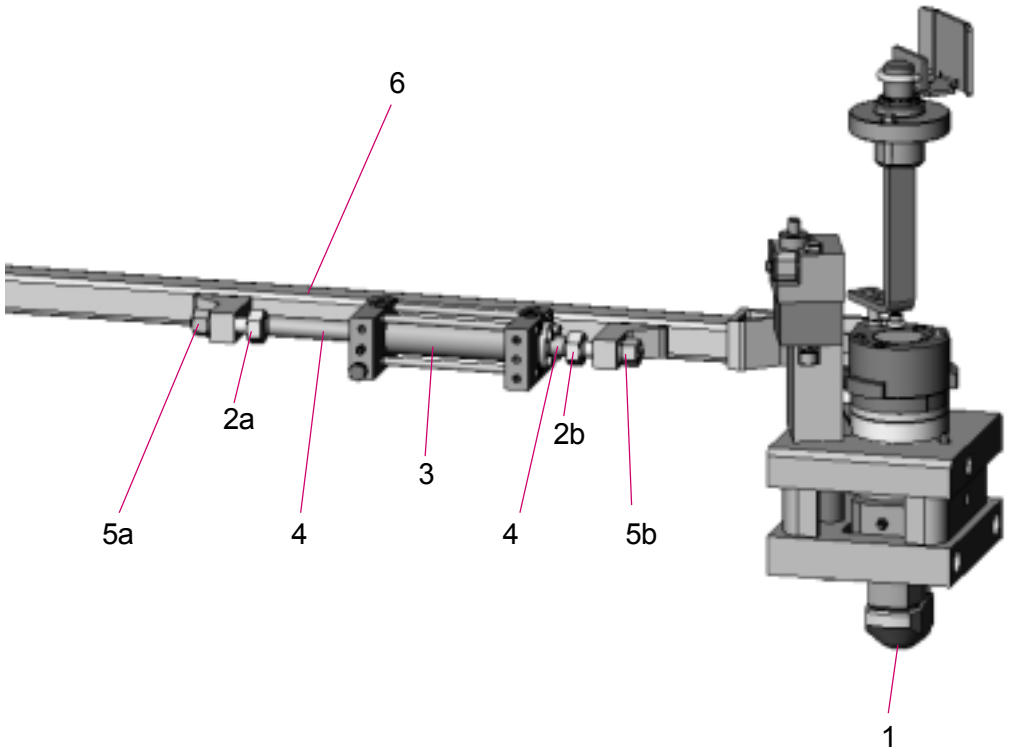

TWISTLOCK ANGLE ADJUSTMENT

1. Turn the twistlocks (pos1) to the fully UNLOCKED position (as shown).

2. If the twistlock heads do not line up with the twistlock sleeve, they can be adjusted by loosening the lock nuts (pos 5) for the adjuster bolts (pos 2)

3. Turn the twistlocks at each end of the end beam so that they line up with the sleeves, if it is found difficult to line up the twistlocks and sleeves accurately distribute the misalignment equally on both sides of the sleeve. Make sure that the twistlock heads DO NOT protrude outside the the theoretical line between twistlocks. If the twistlocks do protrude outside the previously mentioned line between the twistlocks it can cause jamming in corner castings as the spreader is lifted off the container.

4. Run both adjuster bolts (pos 2) up to the piston rod (pos 4) ends of the twistlock cylinder (pos 3) by hand making sure that neither the twistlocks nor the cylinder are moved. Tighten the lock nut (pos 5a) of the inside adjuster (pos 2a) first.

5. Unscrew / back off the outer adjuster bolt (pos 2b) no more than 2 flats of the hexagan head (60°) so that there is only just enough play to allow the tie rod (pos 6) to slide back and forth across the adjuster bolts when the twistlock cylinder (pos 3) is activated.
CAUTION if the gap between the twistlock cylinder rod ends is too large the rod ends will hammer against the adjusters and subsequent damage will occur to the piston rod ends.

6. Tighten the lock nut (pos 5b) securely while at the same time ensuring that the adjuster bolt (pos 2b) does not move.

7. Activate the twistlocks to the LOCKED position and check that the twistlock heads are 90^0+/- 10^0 to the twistlock sleeve.

02-05(03-04,
09-03,05-03)

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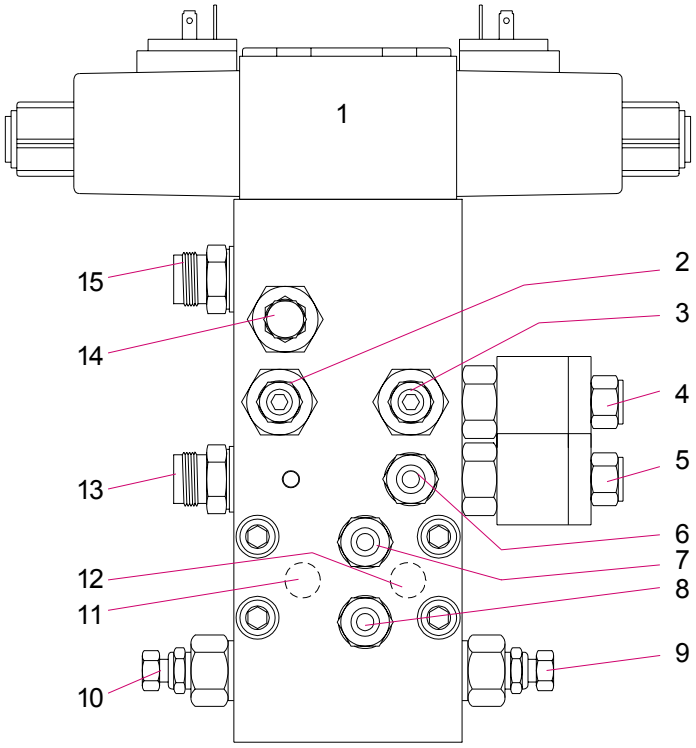
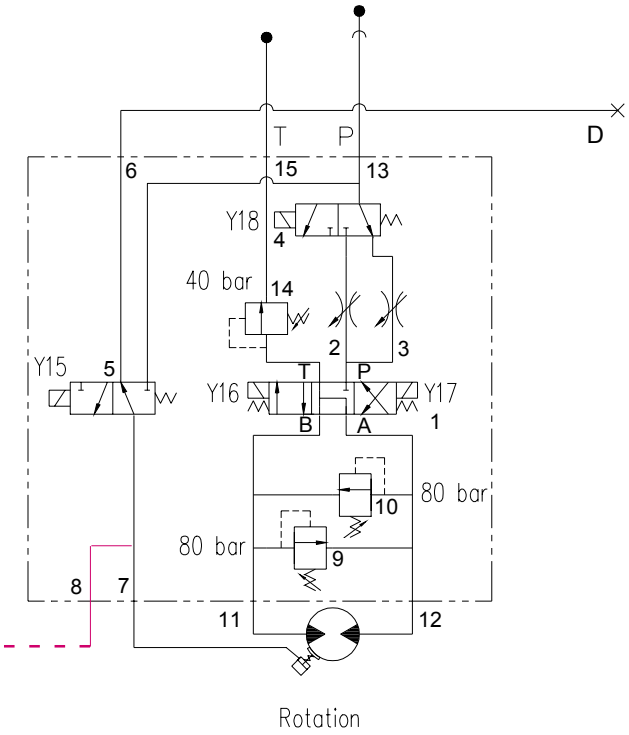


Adjustment of the initial low speed rotation
To alter the initial speed of rotation, turn the adjuster on cartridge no 3, clockwise to decrease speed and anti-clockwise to increase speed.

Adjustment of high speed rotation
To alter the high speed of rotation, turn the adjuster on cartridge no 2, clockwise to decrease speed and anti-clockwise to increase speed.

Adjustment of rotation motor pressure
To alter the rotation motor pressure, turn the adjusters on cartridge nos 9 and 10 clockwise to increase the pressure and anti-clockwise to decrease the pressure.



	ITEM LIST	
1	Solenoid valve	Rotation direction
2	High speed	Flow control valve
3	Low speed	Flow control valve
4	Solenoid valve	Rotation speed
5	Solenoid valve	Brake release
6	Drain port	
7	Brake port 1	
8	Brake port 2	
9	Relief valve	Setting (80 bar)
10	Relief valve	Setting (80 bar)
11	Motor port 1	
12	Motor port 2	
13	Pressure line	
14	Relief valve	Setting (40 bar)
15	Tank port	

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SECTION

C

DIAGRAMS

ELME SWEDISH SPREADER SYSTEMS
ELMHULTS KONSTRUKTIONS AB

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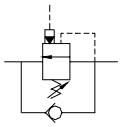
1. Pump (variable displacement)

2. Motor (fixed displacement)

3. Pressure relief valve (normaly closed)
RPEC-FAN

4. Sequence valve (normaly closed)
RSDC-LAN

5. Pressure reducing valve (normaly open)
PBDB-LAN
PRH 102 S 50

6.  Load control valve (counterbalance)
CBCA-LHN

7. Check valve
CXDA-XCN
9C600S
CVH 103 P

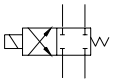
8. Check valve (pilot operated)
CKCB-XCN

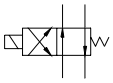
9. Check valve (pilot operated)
CPOM2

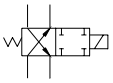
10. Flow control valve (fully adjustable)
NFCC-LCN
NV 101 S

11. Flow control valve (fully adjustable with reverse free flow check)
NCCB-LCN
9F600S
FM2DDKN

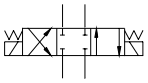
12. Flow control valve (fully adjustable, pressure-compensated with reverse free flow check)
FDCB-LAN

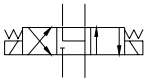
13.  Directional valve (single solenoid, 2 positions)

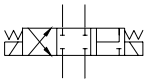
14.  Directional valve (single solenoid, 2 positions)

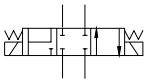
15.  Directional valve (single solenoid, 2 positions)

16. Directional valve (double solenoid, 2 positions, whitout spring)

17.  Directional valve (double solenoid, 3 positions, spring centered)

18.  Directional valve (double solenoid, 3 positions, spring centered)

19.  Directional valve (double solenoid, 3 positions, spring centered)

20.  Directional valve (double solenoid, 3 positions, spring centered)

21. Main line

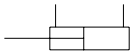
22. Pilot line

23. Closed connection

24. Connection point

25. Crossing point without connection

26. Filter

27.  Double acting cylinder

28. P Pressure

29. T Tank

30. Components range

05-03

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Pressure line P
Min 140 bar
Tank line T
Drain line
140 bar
Option
Y47
Y48
RH
Front
Rear
RH
LH
LH
Sidetilt
T
P
Y18
40 bar
Y16
Y17
Y15
80 bar
80 bar
Rotation
P
T
Y14
Y13
Sideshift
80 bar
Y14
Y13
Sideshift
P
T
Option
Y10
Y12
Stop RH side
P
T
Option
Y9
Y11
Stop LH side
Y3
Y1
80 bar
Twistlocks LH side
Y4
Y2
80 bar
Twistlocks RH side
Y7
Y5
Y8
Y6
Extension RH side
Extension LH side

Ritn.nr 781 815

Designer	Drawn by	Checked	Group code	Scale	File name	Date
	AN		ok			2004-04-19

ELME

Description: Hydraulic schematic ELME spreader 817 Lansing

Drawing no. 781 815

Cable type A
(1,65m)
U2.2
U2.1
45.2
45.1
(7.5m)

Electric box on spreader (L1)

PCB1
PCB2A
PCB2B
PCB nr 776 517
PCB nr 776 516

X01 Pressure, Lift allowed, Safety Overr., Seated RH, Seated LH, Seated, Not locked, Locked
X04 0VDC, 0VDC, 0VDC, +24VDC, +24VDC, +24VDC, Telescop.safe, Auto.twl.
X11:A Input: Work.light, Sides.RH, Sides.LH, Unlock stops, Lock stops, Unlock Twl, Lock Twl
X11:B Input: Work.light, Extend, Retract
X12:A LH out
X12:B LH out
X13:A RH out
X13:B RH out
X02 LH: Not Lin, Lock in, Seat.fr, Seat.r, Not Lout, Lock out, +/-
X03 RH: Not locked, Seated all, Seated LH, Seated RH
X05 Ind.(Blink): Not locked, Locked

Spb.3.1 771 308 (2,5m)
Spb.3.2 771 320 (5,5m)
Spb.3.3 771 322 (5,5m)
Spb 3 781 252
S1 Locked LH
S3 Unlocked LH
S5 Seated LH front
S7 Seated LH rear

Spb.4.1 771 316 (6,3m)
Spb.4.2 771 320 (5,5m)
Spb.4.3 771 322 (5,5m)
Spb 4 781 252
S2 Locked RH
S4 Unlocked RH
S6 Seated RH front
S8 Seated RH rear

Spb.5.1 771 308 (2,5m)
Spb 5 781 436
Y1 Lock twistlocks LH
Y3 Unlock twistlocks LH
Y5 Extension LH
Y7 Retraction LH
Y10 Lock stop RH (optional)
Y12 Unlock stop RH (optional)

Spb.6.1 771 316 (6,3m)
Spb 6 781 436
Y2 Lock twistlocks RH
Y4 Unlock twistlocks RH
Y6 Extension RH
Y8 Retraction RH
Y9 Lock stop LH (optional)
Y11 Unlock stop LH (optional)

Spb.8.1 771 307 (1,6m)
Spb 8 781 253
Y13 Sideshift LH
Y14 Sideshift RH

62.1
63.1
(6.4m)
(0.8m)
Cable type 2x1,5
H11 Working light LH (option)
H12 Working light RH (option)

Chassi-housing 24 pin Harting ELME p/n 763 285
24 pin male insert ELME p/n 760 548

(U1)
(3.0m)
41.1
Cable 25x1

1 –
2 –
3 +
4 +
5 Locked
6 Not Locked
7 Seated
8 Lock
9 Unlock
10 Extension
11 Retraction
12 Sideshift
13 Sideshift
14 Stops Lock (option)
15 Stops Unlock (option)
16 Rotation CW
17 Rotation anti-CW
18 Pressure
19 Working light (option)
20 Working light (option)
21 – (option)
22 – (option)
23 Spare (option)
24 Safety override

Electric box on rotator (L4)

X4 Work. light, Work. light
PCB4
X1 Rot CCW, Rot CW, Tilt LH, Tilt RH, P. damp, P. damp, Lock damp, Rot Overr
X2 Pressure, Pressure in, Rot to 0, Ind. 0, +24VDC, +24VDC, 0VDC, 0VDC
X3
X4
K1
P1 High speed

Cable type 2x1,5sqmm
2x4,0m

Spb.23.1 771 306 (1,0m)
Spb 23 781 255
Y15 Brake release
Y16 Rotation CW
Y17 Rotation CCW
Y18 High speed rotation
S13 Rotation stop CW
S14 Rotation stop CCW

24V

Wires colour code		
Violett	1	Violet
Brun	2	Brown
Gul	3	Yellow
Blå	4	Blue
Grön	5	Green
Röd	6	Red
Rosa	7	Pink
Grå	8	Grey
Svart	9	Black
Vit	10	White

Electric schematic diagram, see drawing: 780 685

Designer	Drawn by	Checked by	Group code	Scale		Replace
	NAN		ob	–		–
ELME	Wiring diagram 817 Linde				Folio 1/1	Date 2003-11-16
					Dwg no	780 686 C

Dwg no 780 686 C

PCB 4 778 676

X1:3 X3:1
X1:4 X3:2
X1:8 X3:10
X4:5 23-5 S13 Full rotation stop CW
X4:7
Rotation CW U1:16 X1:2 X4:2 23-2 Y16 Rotation CW
X4:9
X4:6 23-6 S14 Full rotation stop CCW
X4:8
Rotation CCW U1:17 X1:1 X4:3 23-3 Y17 Rotation CCW
X4:1 23-1 Y15 Rotation Brake release
0.5-6s X4:4 23-4 Y18 High speed rotation
X4:10
Pressure U1:18 Max load 1.8A X2:1 Pressure in X2:2
X2:7 X2:8
X2:5 X2:6

Print no. 776 516 PCB 1
X6.4-6 X7.4-6 X4.6 X4.7 X4.8 X2.8 X3.8 X4.3 X4.4 X4.5 X7.3 X6.3 X2.7 X3.7
X1.6 Safety override
X1.8 Pressure
X2.1 3-1 X3.1 4-1 S1 Locked LH side S2 Locked RH side
X1.1 Locked X2.5 X3.5 Ind. Locked Twistlocks
X5.1 Fault detect Not locked
X2.2 3-2 X3.2 4-2 S3 Not locked LH side S4 Not locked RH side
X1.2 Not locked X2.6 X3.6 Ind. Not Locked Twistlocks
X5.2 Fault detect Locked
X2.3 3-3 X2.4 3-4 X1.7 X3.3 4-3 X3.4 4-4 S5 Seated LH side front S7 Seated LH side rear S6 Seated RH side front S8 Seated RH side rear
X1.3 X1.4 X1.5 Ind. Seated Ind. Seated LH side Ind. Seated RH side
X5.3 Blink logic seated
X5.4 Logic LH
X5.5 Logic RH
X4.1 Logic auto twistlock
K1 Lift interrupt

Spare U1:23
0V DC U1:22
0V DC U1:21
0V DC U1:1
0V DC U1:2
+24 VDC U1:3
+24 VDC U1:4
1 2 3
4 5
24 24
8 8
9 9

U1:5 Flashing when a faulty locked sensor is detected
U1:6 Flashing when a faulty not locked sensor is detected

Safety override U1:24 11 11
Ind. Seated Max load 1.8A U1:7 10 10
Ind. Locked Max load 1.8A U1:5 20 20
Ind. Not locked Max load 1.8A U1:6 21 21
22 22
Lock Twistlock U1:8 12 12
Unlock twistlock U1:9 13 13
(option) Stops Lock U1:14 18 18
(option) Stops Unlock U1:15 19 19
Sideshift LH U1:12 16 16
Sideshift RH U1:13 17 17

23
1,2,3
4,5

Print no. 776 517 PCB 2A
X14A :3 X14A :4-6 X12A :8 X13A
X11A :1
X12A :1 X13A :1 5-1 6-1 Y1 Lock twistlock LH Y2 Lock twistlock RH
X11A :2
X12A :2 X13A :2 5-2 6-4 Y3 Unlock twistlock LH Y4 Unlock twistlock RH
X11A :3
X12A :3 X13A :3 5-5 6-5 Y10 Lock stop RH Y9 Lock stop LH
X11A :4
X12A :4 X13A :4 5-6 6-6 Y12 Unlock stop RH Y11 Unlock stop LH
X11A :5
X12A :5 X12A :6 8-1 8-2 Y13 Sideshift left Y13 Sideshift left
X11A :6
X13A :5 X13A :6 8-3 8-4 Y14 Sideshift right Y14 Sideshift right
X11A :7
X12A :7 F1 1 H1 Working light LH
X11A :8
X13A :7 F2 1 H2 Working light RH

6 6
7 7

Work light U1:4
Work light U1:5
Extension U1:10 14 14
Retraction U1:11 15 15

Print no. 776 517 PCB 2B
X14A :3 X14A :4-6 X12A :8 X13A
X11A :1
X12A :1 X13A :1 5-3 6-3 Y5 Extension LH Y6 Extension RH
X11A :2
X12A :2 X13A :2 5-4 6-4 Y7 Extension LH Y8 Extension RH
X11A :7
X12A :7 F1
X11A :8
X13A :7 F2

Electric wiring diagram, see drawing: 780 686

Designer	Drawn by NAN	Checked by	Group code 0a
Scale –	Folio 1/1	Replace –	Date 2003-12-16

Electric schematic diagram
817 Linde separate Safety override

ELME

Dwg no 780 685 B

Dwg no 780 685 B

Part number	Code	Qty	Part name	Note
761 174	41.1		Ölflex 110 NR 25x1,0	Cable / meter
761 174	45		Ölflex 110 NR 25x1,0	Cable / meter
761 622	Cable 62	6,5m	Ölflex 110 NR 2x1,5	from el.box to work. light
761 622	Cable 63	1,0m	Ölflex 110 NR 2x1,5	from el.box to work. light
771 306	Cbl SpB 23.1	1.0m		from el. box to Spb
771 309	Cbl SpB 24.1	3,0m		Option
771 308	Cbl SpB 8.1	2.5m		from el. box to SpB
771 308	Cbl SpB 3.1	2,5m		from el. box to SpB
771 308	Cbl SpB 5.1	2,5m		from el. box to SpB
771 316	Cbl SpB 4.1	6,5m		from el. box to SpB
771 316	Cbl SpB 6.1	6,5m		from el. box to SpB
771 320	Cbl SpB 3.2	5,5m		in flex-track-chain
771 320	Cbl SpB 4.2	5,5m		in flex-track-chain
771 322	Cbl SpB 3.3	5,5m		in ext. beam
771 322	Cbl SpB 4.3	5,5m		in ext. beam
776 516	PCB 1	1	Control PCB	
776 517	PCB 2	2	Interface PCB	
776 518	PCB 3	1	Auto locking PCB	Option
778 676	PCB 4	1	Rotator PCB	
778 169	Cbl PCB	1	Cable assy.	PCB1-PCB2A
778 170	Cbl PCB	1	Cable assy.	PCB1-PCB2B
778 171	Cbl PCB	1	Cable assy.	PCB1-PCB3 Option
762 924	X01...	10	PCB socket block	8-pin
763 573	X12,X3	3	PCB socket block	10-pin
762 922	X13,X4	3	PCB socket block	10-pin
762 940	X..	32	Mounting block	
777 355		1	Empty el. box on rotator	
777 354		1	Empty el. box on spreader	
758 026		2	PCB board bracket	
758 027		2	PCB strip-long	
758 028		4	PCB strip-short	
		1	Indication light	See section F
762 977	F1-F2	4	Minifuse 5A	
761 491	S1-8,13,14	10	Proximity switch	
763 757	H11,12	2	Working light	Option
760 418	R15-18	4	Relay	Option
760 450	R15-18	4	Relay-socket	Option
778 490		1	Relay-bracket	Option
763 285	U1,U2:2	2	Chassi housing 24-p	
762 765	U1,U2:2	2	Cover 24-p	
760 548	U1,U2:2	2	Insert 24-p male	
763 286	U2:1	1	Cable housing 24-p	
760 550	U2:1	1	Insert 24-p female	
762 898	X4	2	Terminal	Working light
762 907	X4:1	5	Terminal	
762 899	X4	11	Terminal	

Part number	Code	Qty	Part name	Note
781 252	Spb 3,4	2	Harness	
781 436	Spb 5,6	2	Harness	with stops
781 253	Spb 5,6,8	3	Harness	Spb 5,6 w/o stops
781 255	Spb 23	1	Harness	

Designer	Drawn by	Checked by	Group code	Scale	Replace
	NAN		ob	-	-

ELME

Bill of material
817 Linde

Folio 1/1
Date 2004-08-31
Dwg no 782 917 B

Dwg no 782 917 B

SECTION

D

MECHANICAL PARTS

ELME SWEDISH SPREADER SYSTEMS
ELMHULTS KONSTRUKTIONS AB

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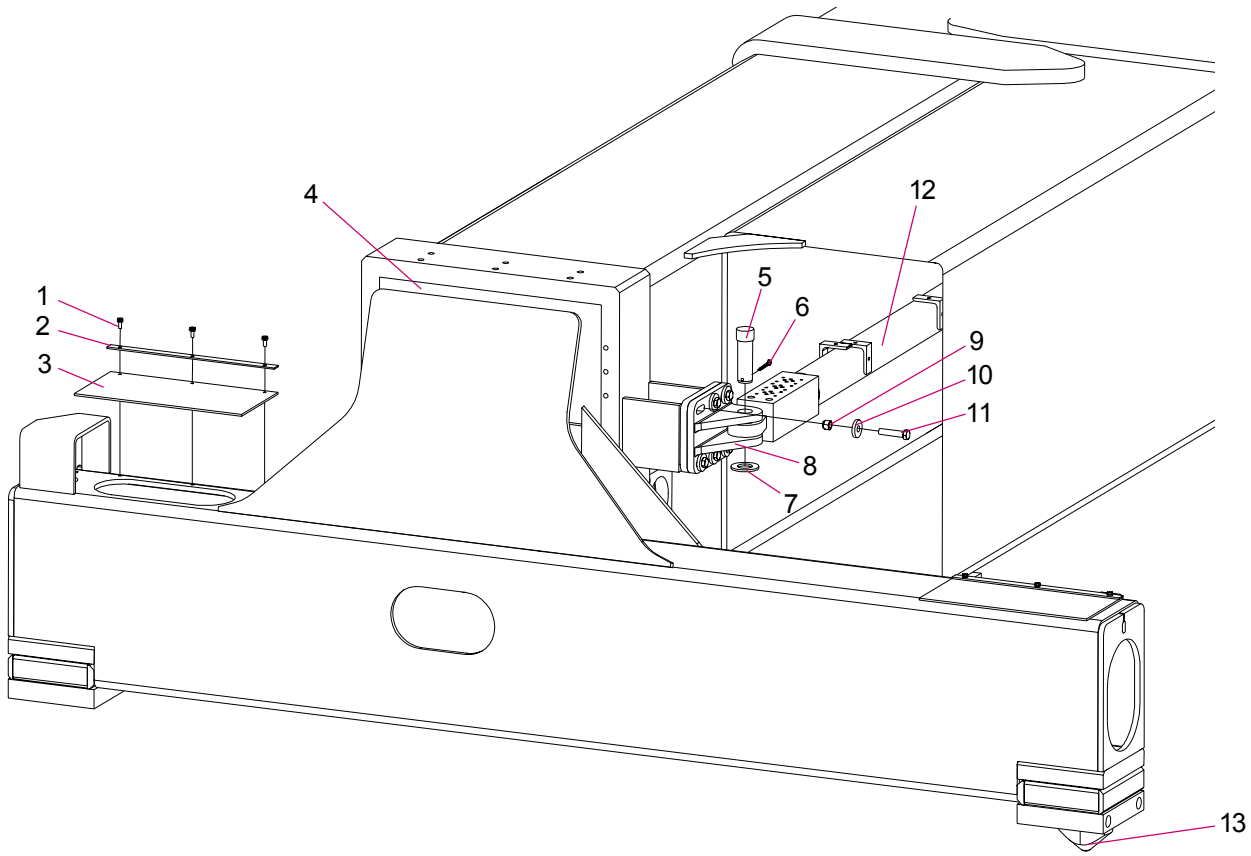

QTYS ARE FOR A COMPLETE SPREADER

Note	Item	Part no	Qty	Part name	
	1	761 764	12	Bolt	M6S M6x16
		760 585	12	Washer	M6 Nordlock
	2	741 179	4	Strip	
	3	741 178	4	Cover	
D)	4		2	Wear pads	
	5	740 726	2	Pin	
	6	761 122	2	Cotter pin	
	7	760 564	2	Washer	
	8	740 677	2	Bracket	
	9	760 917	12	Nut	M12 Locking
	10	761 950	12	Washer	
	11	760 309	12	Bolt	M6S M12x55
E)	12		2	Extension cylinder assy.	
x)		740 726	2	Pin	
x)		761 122	2	Cotter pin	
x)		760 564	2	Washer	
D)	13		2	Pendular twistlock assy.	

D) See section D
E) See section E
x) Mounted in opposite end of the ext. cyl.

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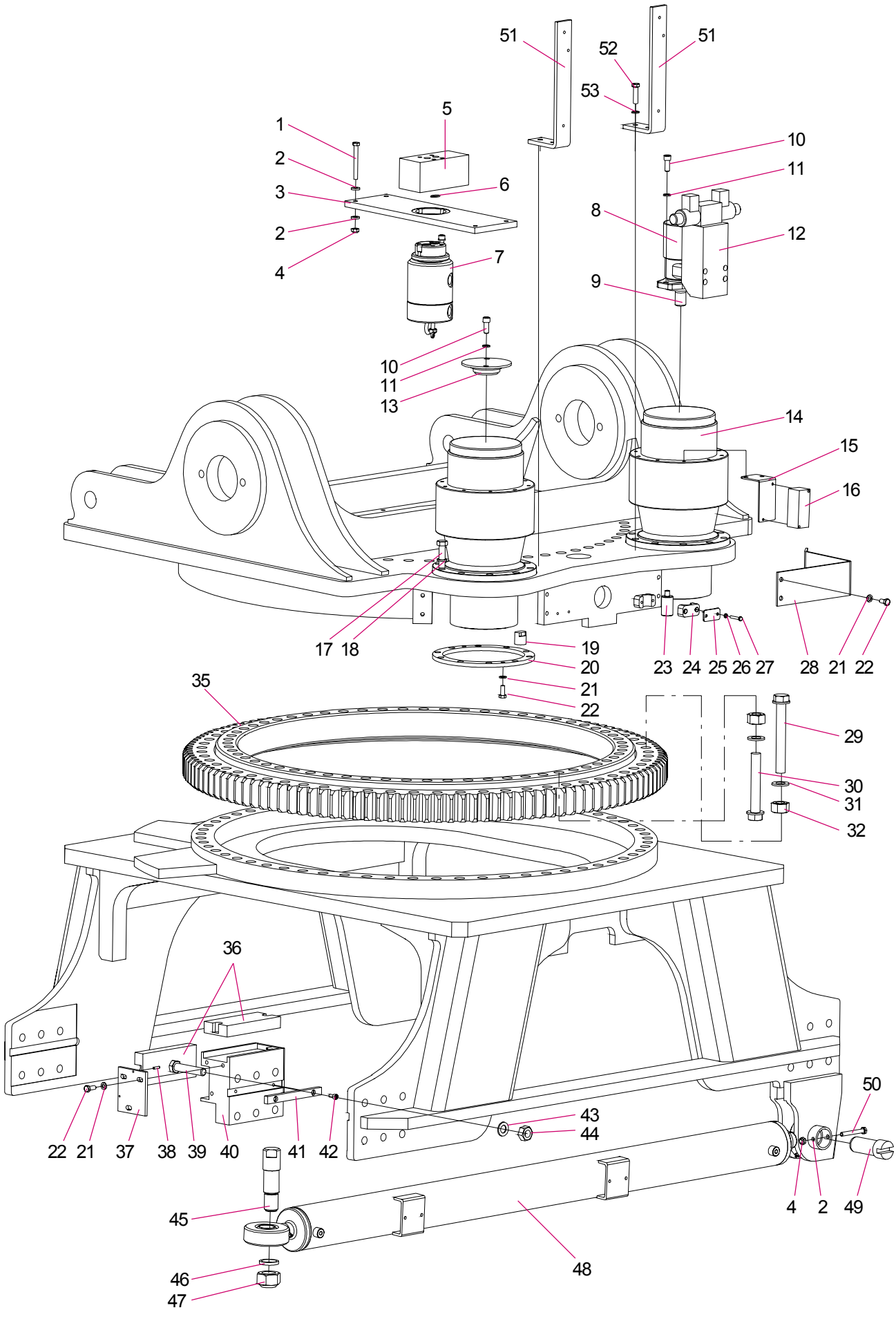

05-04(01-04,11-03,03-03,05-02)

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Note	Item	Part no	Qty	Part name	
	1	761 626	4	Bolt	M6S M10x90
	2	760 391	12	Washer	
	3	771 877	1	Bracket	
	4	760 927	6	Nut	M10 Locking
E)	5		1	Valve assy. (swivel)	
	6	760 250	2	O-ring	
E)	7		1	Sviwel assy.	
x)	8	761 111	1	Hydraulic motor	
	9	761 463	1	Key	
	10	760 983	8	Screw allen	MC6S M12x30
	11	760 557	8	Washer	M12 Nordlock
E)	12		1	Valve assy. (rotation/brake)	
	13	763 092	1	Cover	
y)	14	763 084	2	Transmission	
	15	782 172	1	Bracket	
F)	16		1	Splitter box	
	17	761 815	20	Bolt	M6S M16x60
	18	760 586	20	Washer	M16 Nordlock
	19	759 722	2	Key	
	20	770 794	2	Nut ring	
	21	760 556	36	Washer	M10 Nordlock
	22	762 772	36	Bolt	M6S M10x25
F)	23		X	Sensor	
	24	761 897	2	Bracket	
	25	762 849	2	Top plate	
	26	760 585	4	Washer	M6 Nordlock
	27	762 246	4	Screw allen	MC6S M6x55
	28	759 718	2	Cover plate	
	29	763 274	59	Bolt	M6S M24x190
	30	760 380	52	Bolt	M6S M24x160
	31	761 813	222	Washer	
	32	760 910	111	Nut	M24
	35	761 469	1	Slewing ring	
	36	743 874	8	Nylon pad	
	37	744 793	8	Plate	
	38	760 511	16	Roll pin	
	39	761 933	24	Bolt	M6S M20x100
	40	724 794	4	Housing	
	41	745 101	4	Key	
	42	760 901	12	Screw allen	MC6S M8x16
	43	761 656	24	Washer	
	44	761 932	24	Nut	M20
	45	754 900	2	Pin	
	46	771 438	2	Ring	
	47	760 922	2	Nut	M36
E)	48		2	Side shift cylinder assy.	
	49	771 059	2	Pin	
	50	760 991	2	Bolt	M6S M10x80
	51	779 204	2	Bracket (electrical box)	
	52	763 511	4	Bolt	M6S M12x45
	53	760 557	4	Washer	M12 Nordlock

E) See section E
F) See section F

x) Use seal kit: 790 969 for Charr Lynn type of motor
Use seal kit: 791 077 for Ross Parker type of motor
y) Use seal kit: 791 093

05-04(01-04,11-03,03-03,05-02)

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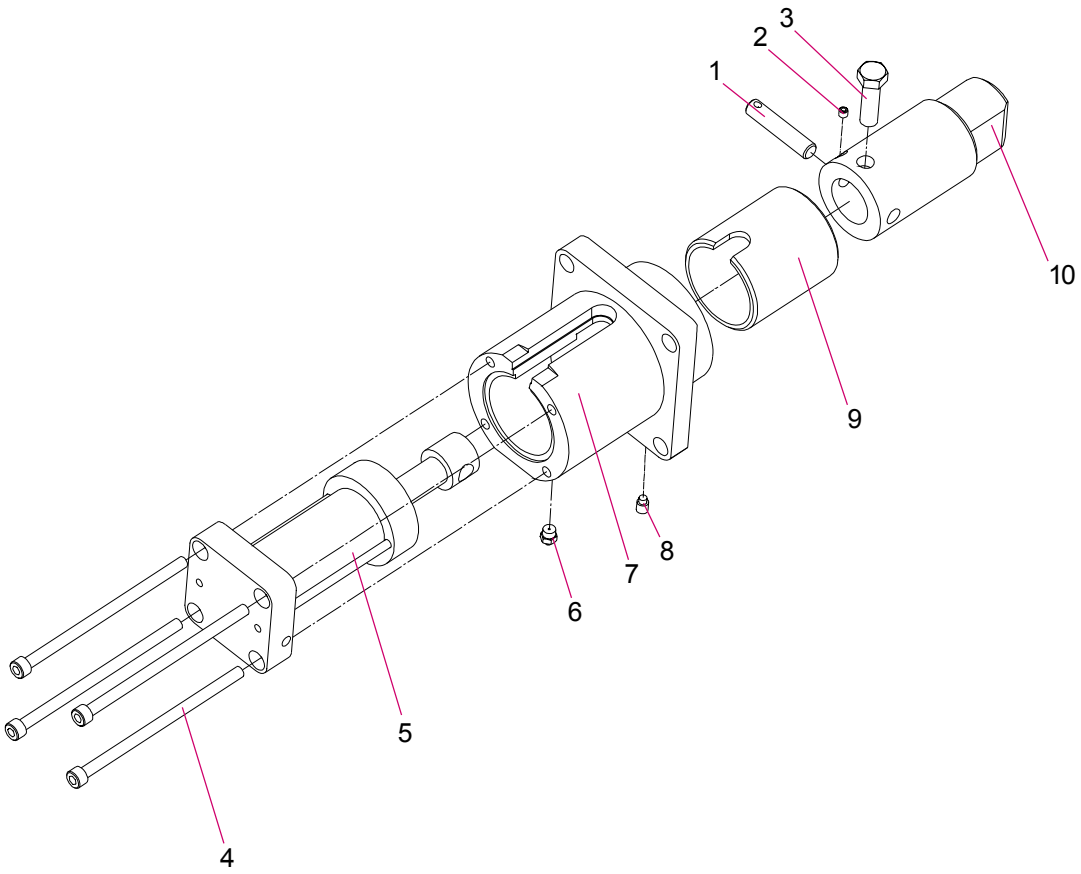

Note	Item	Part no	Qty	Part name	
		745 466	1	Hydraulic stop assy.	
	1	745 820	1	Pin	
	2	760 981	1	Set screw	
	3	760 903	1	Bolt	M6S M12x40
	4	760 328	4	Screw allen	MC6S M8x150
x)	5	743 052	1	Hydraulic cylinder	
	6	760 417	1	Grease nipple	
	7	772 792	1	Housing	
	8	762 459	1	Grub screw	
	9	760 558	1	Bushing	
	10	742 859	1	Lock pin	

x) Seal kit: 790 908

01-04(10-03,05-02)

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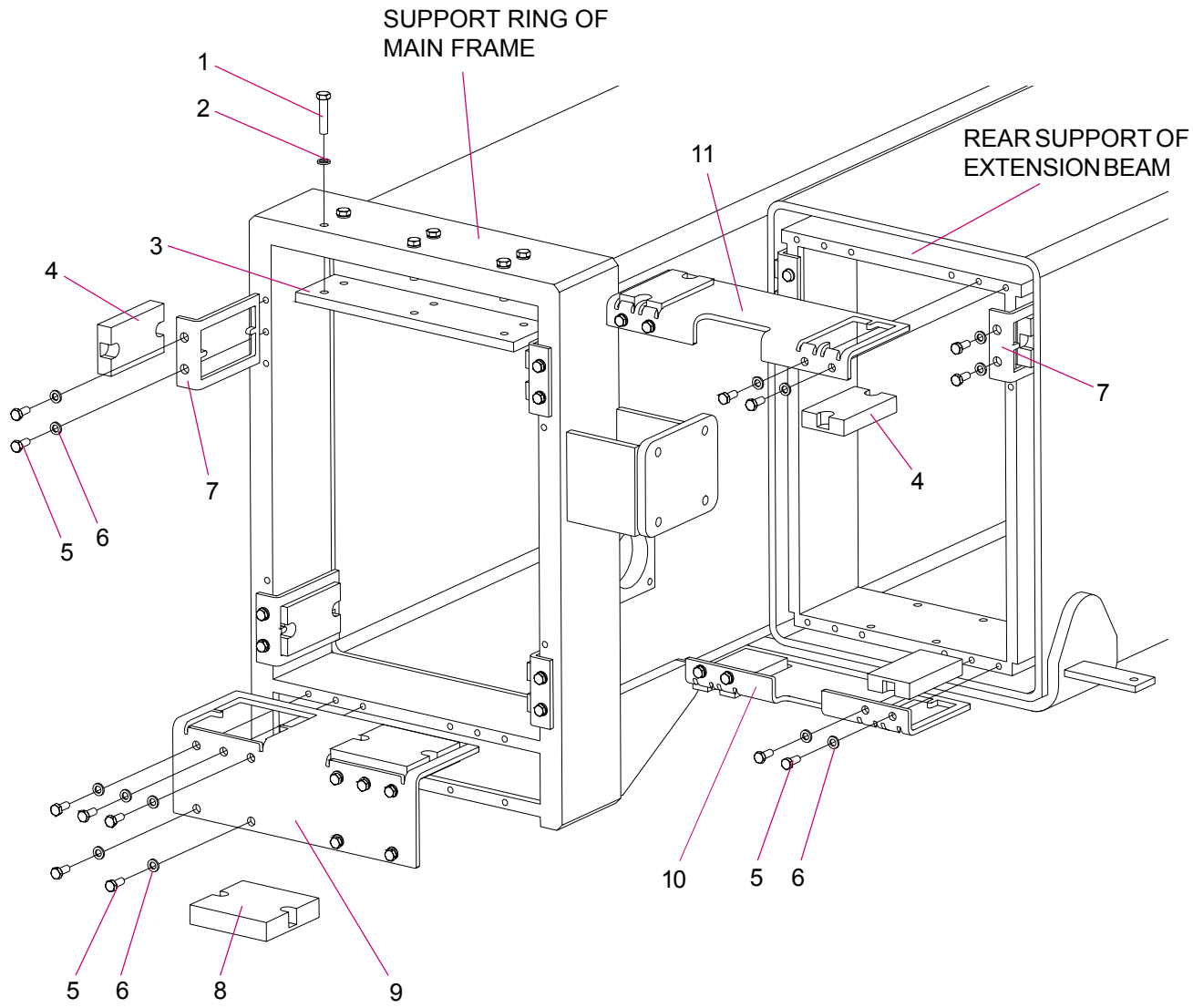
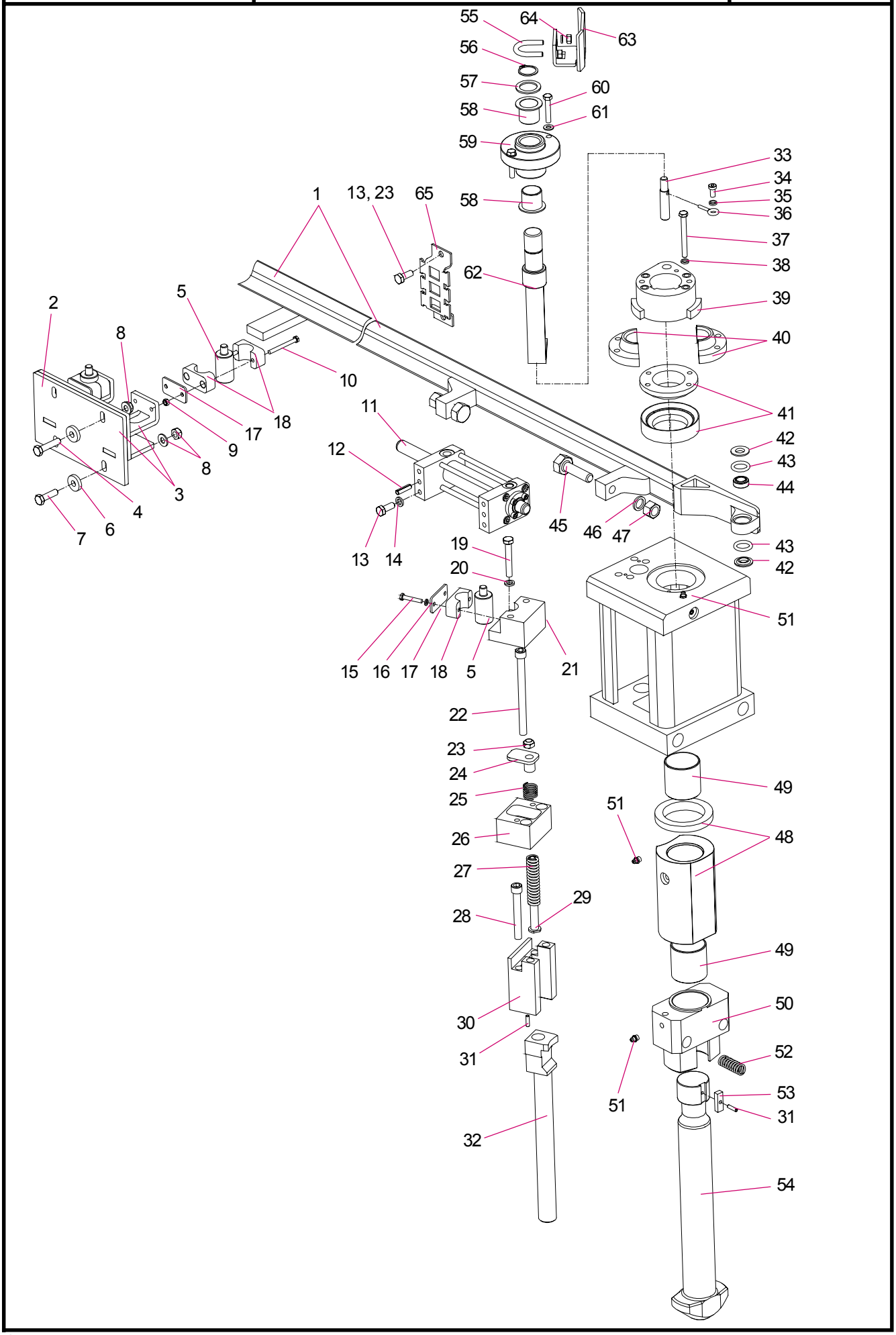


Multiply Qtys by 2 for a complete spreader

Note	Item	Part no	Qty	Part name	
	1	760 309	6	Bolt	M6S M12x55
	2	760 557	6	Washer	M12 Nordlock
	3	744 928	1	Shim	
	4	743 983	10	Wear pad	
	5	762 772	30	Bolt	M6S M10x25 10.9
	6	760 556	30	Washer	M10 Nordlock
	7	771 507	6	Retainer	
	8	743 510	2	Wear pad	
	9	776 369	1	Retainer	
	10	776 368	1	Retainer	
	11	776 367	1	Retainer	



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Multiply Qtys by 2 for a complete spreader.

Note	Item	Part no	Qty	Part name
	1	783 245	1	Tie rod
y)	2	779 280	1	Bracket
y)	3	779 281	1	Sensor bracket
y)	4	761 908	2	Bolt M6S M10x45
F)	5		4	Proximity switch
y)	6	760 489	4	Washer
y)	7	760 926	2	Bolt M6S M10x40
y)	8	760 927	4	Nut M10 Locking
y)		761 903	4	Washer
y)	9	760 950	4	Nut M6 Locking
y)	10	760 908	4	Bolt M6S M6x60
s)	11	752 651	1	Twistlock cylinder assy.
	12	760 379	2	Roll pin
	13	760 969	6	Bolt M6S M10x25
	14	760 556	4	Washer M10 Nordlock
	15	760 907	4	Bolt M6S M6x35
y)	16	760 585	4	Washer M6 Nordlock
y)	17	762 849	4	Washer
y)	18	761 897	4	Bracket
	19	762 864	4	Bolt M6S M10x65
	20	760 556	4	Washer M10 Nordlock
	21	758 134	2	Bracket
	22	762 777	4	Screw allen MC6S 12x150
	23	760 927	4	Nut M10 Locking
	24	758 133	2	Indicator
	25	762 776	2	Spring
	26	758 132	2	Bracket
	27	762 175	2	Spring
	28	760 291	4	Screw allen MC6S M12x90
	29	758 131	2	Rod
	30	770 368	2	Seated tower
	31	760 511	6	Roll pin
	32	783 255	2	Seated pin

Note	Item	Part no	Qty	Part name
	33	754 760	2	Pin
	34	760 901	2	Scr allen MC6LS 8x16
	35	760 555	2	Washer M8 Nordlock
	36	760 487	2	Ring pin
	37	761 607	8	Bolt M6S M8x80
	38	760 555	8	Washer M8 Nordlock
	39	752 647	2	Crank
	40	752 646	2	Collet
t)	41	791 022	2	Upper bearing
	42	762 172	4	O-ring washer
	43	762 171	4	O-ring
	44	762 170	2	Ball joint
	45	740 866	2	Adjuster
	46	760 586	2	Washer M16 Nordlock
	47	760 944	2	Nut M16
u)	48	791 206	2	Lower bearing
	49	762 169	4	Bushing
	50	781 759	2	Sleeve
	51	760 417	8	Grease nipple
	52	760 371	8	Spring
	53	752 649	2	Key
	54	783 244	2	Twistlock
x)	55	763 371	1	Clamp
x)	56	760 403	1	Snap ring
x)	57	763 372	1	Washer
x)	58	763 373	2	Bushing
x)	59	776 406	1	Housing
x)	60	760 970	2	Bolt M6S M8x45
x)	61	761 154	4	Washer
x)	62	783 241	1	Arm
x)	63	775 850	1	Indicator
x)	64	760 919	2	Nut M8 Locking
	65	782 524	1	Bracket

F) See section F
s) Twistlock cyl. Seal kit no. 791 021
t) Upper bearing Use kit no. 791 022
u) Lower bearing Use kit no. 791 206
x) Truck spreaders only
y) Sensor bracket kit. Use kit no. 791 173

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SECTION

E

HYDRAULIC PARTS

ELME SWEDISH SPREADER SYSTEMS
ELMHULTS KONSTRUKTIONS AB

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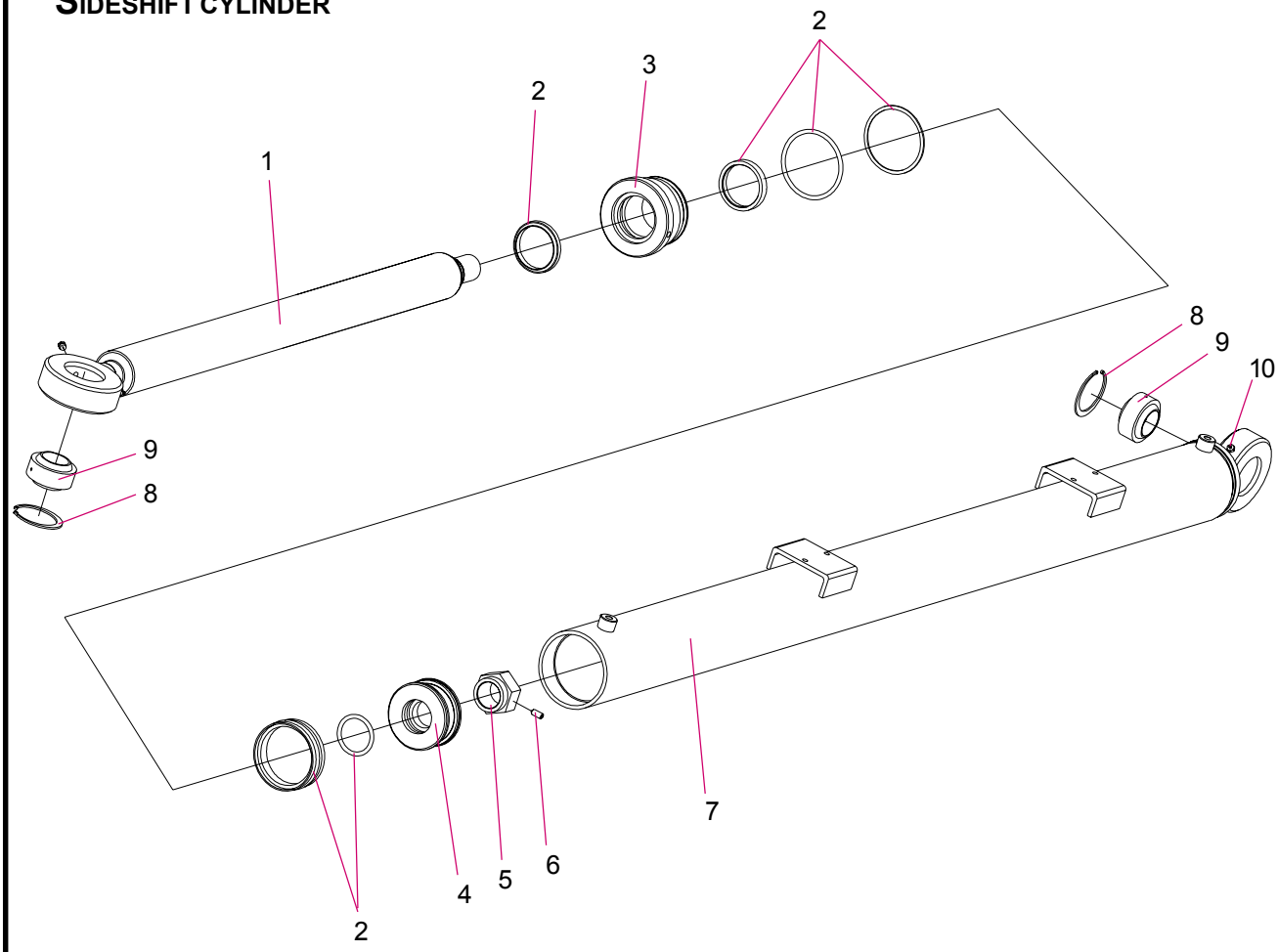
SIDESHIFT CYLINDER



Note	Item	Part no	Qty	Part name
		771 152	1	Sideshift cylinder assy.
	1	771 155	1	Piston rod
x)	2	790 956	1	Seal kit
	3	746 612	1	Gland
	4	740 300	1	Piston
	5	740 302	1	Nut
	6	760 929	1	Set screw
	7	771 153	1	Shell
	8	760 584	2	Snap ring
	9	760 583	2	Ball joint
	10	760 417	4	Grease nipple

x) Seal kit 790 956

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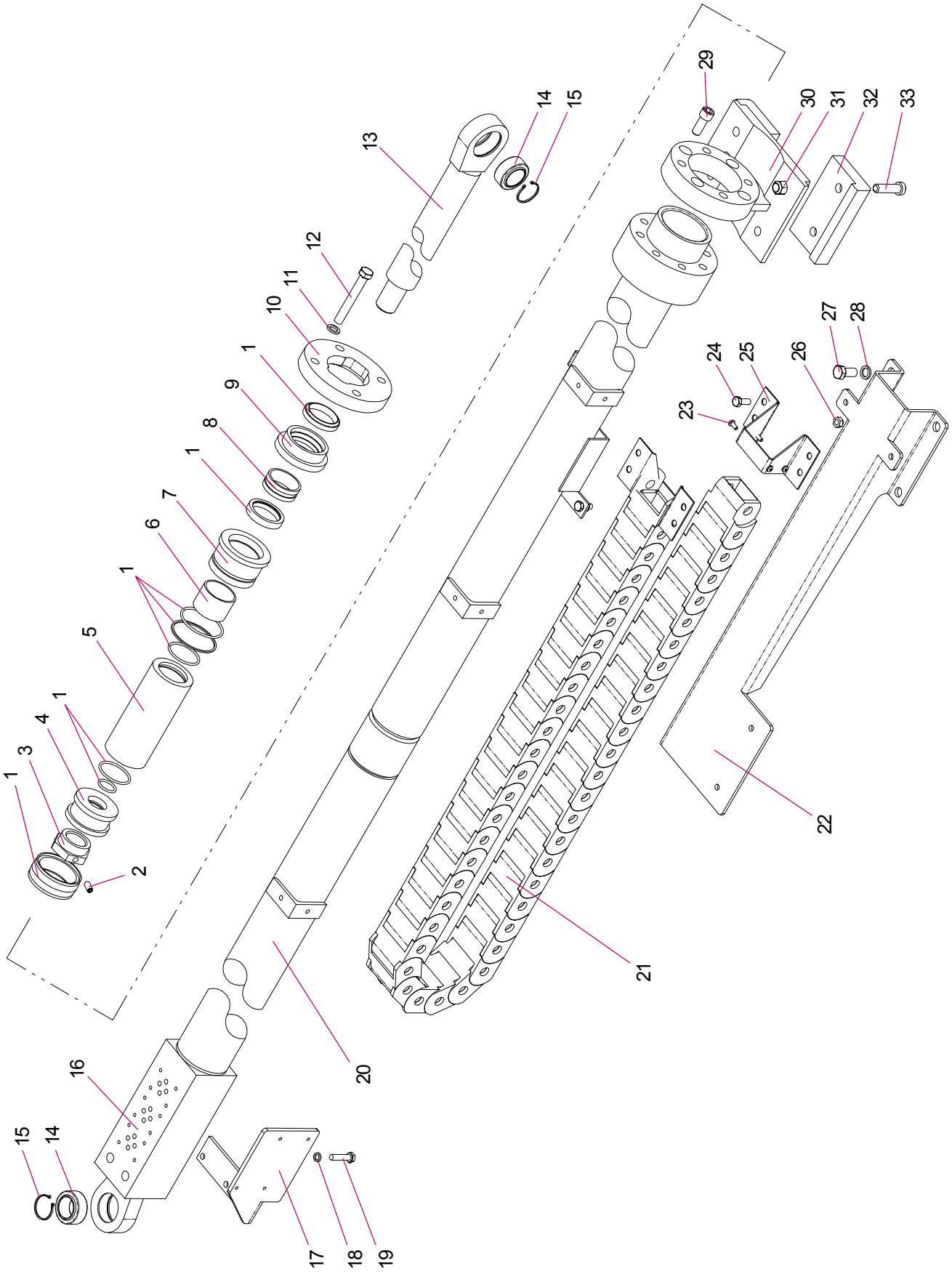

05-02

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Note	Item	Part no	Qty	Part name	
x)y)	1	790 904	1	Seal kit	
y)	2	760 929	1	Set screw	
y)	3	740 956	1	Nut	
y)	4	740 955	1	Piston	
y)	5	743 945	1	Spacer	
y)	6	761 458	1	Bushing	
y)	7	743 944	1	Gland	
y)	8	760 264	1	Guide ring	
y)	9	743 943	1	Washer	
y)	10	741 670	1	Ring	
y)	11	760 557	4	Washer	M12 Nordlock
y)	12	760 311	4	Bolt	M6S 12x85
y)	13	744 051	1	Piston rod	
y)	14	760 401	2	Ball joint	
y)	15	760 402	2	Snap ring	
E)	16		1	Valve assy.	
	17	771 026	1	Bracket	
	18	760 555	2	Washer	M8 Nordlock
	19	760 949	2	Bolt	M6S M8x35
y)	20	756 543	1	Shell	
	21	762 044	1	Flex-track-chain	
	22	756 911	1	Flex chain bracket	
	23	761 253	8	Screw	
	24	760 912	4	Bolt	M6S 8x20
	25	754 758	2	Bracket	
	26	760 919	4	Nut	M8 Locking
	27	760 911	4	Bolt	M6S M12x25
	28	760 557	4	Washer	M12 Nordlock
	29	760 983	4	Screw allen	MC6S 12x30
	30	755 603	1	Support	
	31	760 917	4	Nut	M12 Locking
	32	743 177	2	Nylon pad	
	33	760 984	4	Screw allen	MC6LS 12x45

E) See section E
x) Repair kit Use kit no: 790 904
y) Hydraulic cylinder assy: 756 616

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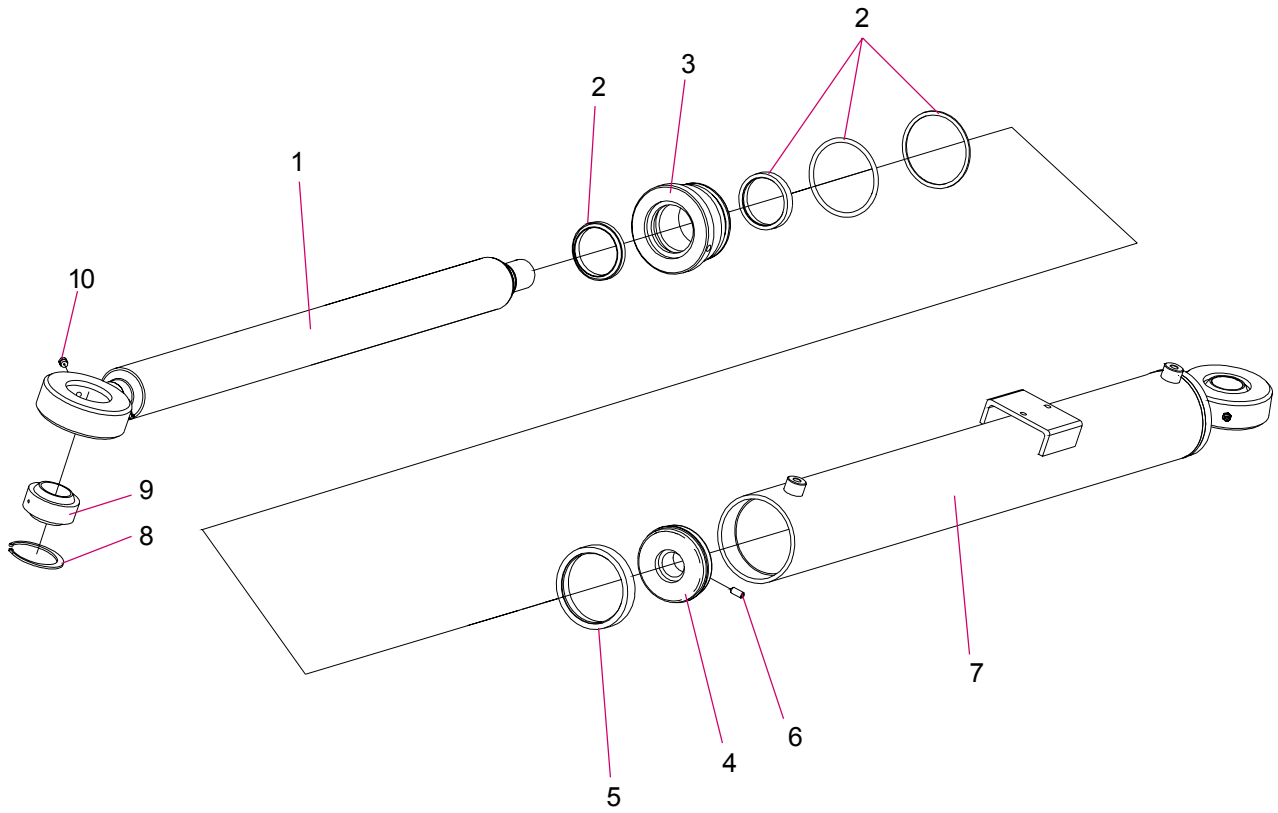

Note	Item	Part no	Qty	Part name
		781 814	1	Cylinder assy.
	1	750 531	1	Piston rod
x)	2	790 936	1	Seal kit
	3	741 605	1	Gland
	4	744 885	1	Piston
	5	762 549	1	Guide ring
	6	760 929	1	Set screw
	7	750 530	1	Shell
	8	760 426	2	Snap ring
	9	760 588	2	Ball joint
	10	760 417	4	Grease nipple

x) Seal kit 790 936

02-05(04-04)

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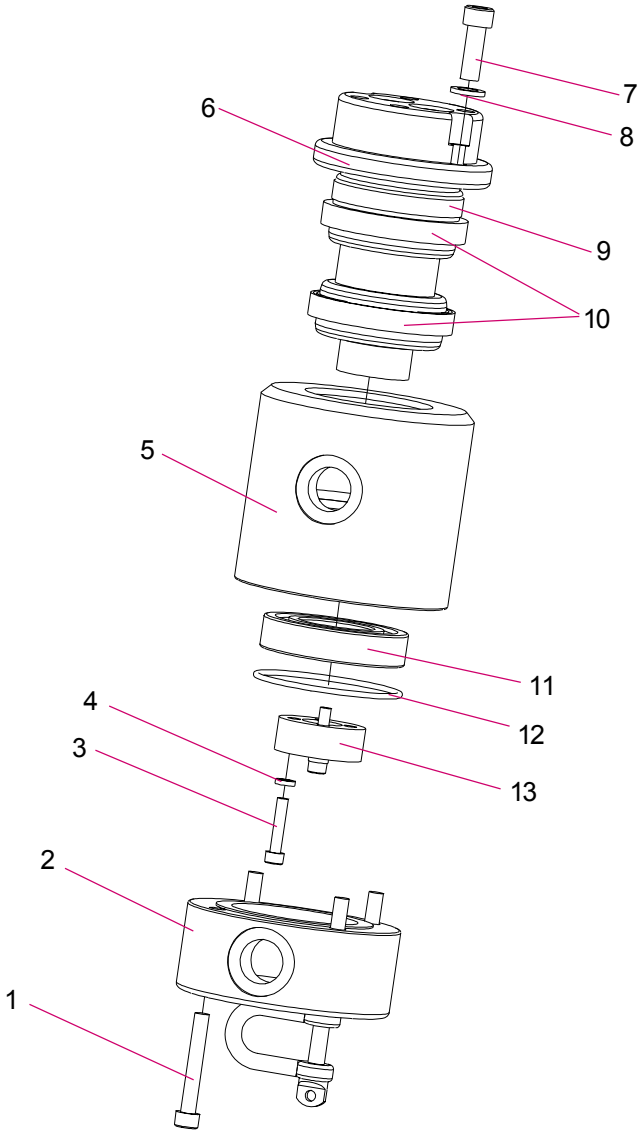

Note	Item	Part no	Qty	Part name	
		771 725	1	Swivel assy.	
	1	761 947	4	Screw allen	MC6S M8x55
	2	774 321	1	Base plate	
	3	760 217	4	Screw allen	MC6S M6x30
	4	760 585	4	Washer	M6 Nordlock
	5	771 723	1	Housing	
	6	771 722	1	Spindle	
	7	761 820	4	Screw allen	MC6S M10x30
	8	760 556	4	Washer	
	9	763 123	1	Bushing	
x)	10	763 122	2	Seal ring	
	11	763 121	1	Bearing	
x)	12	761 710	1	O-ring	
	13	774 320	1	Washer	

x) Seal kit: 791 101

05-02

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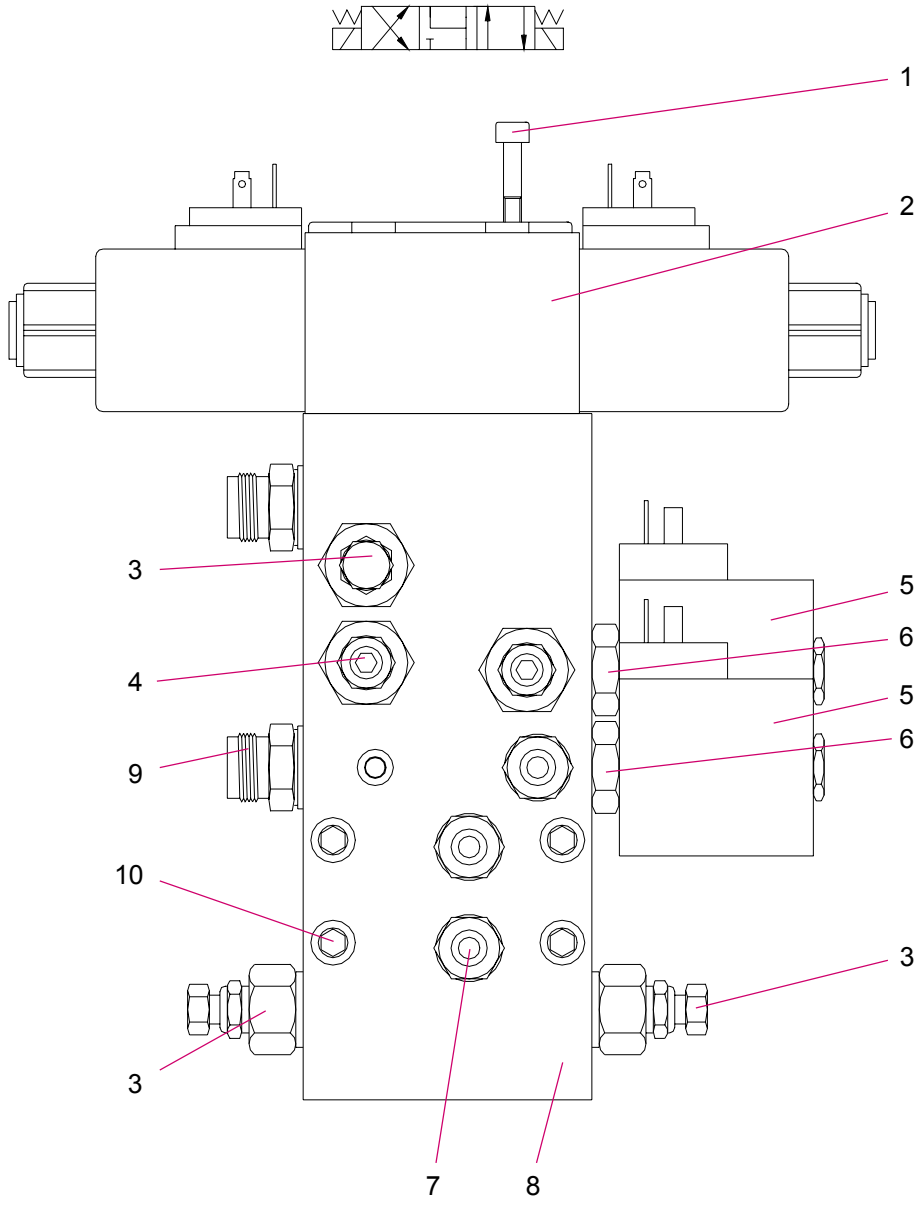

Note	Item	Part no	Qty	Part name	
		781 971	1	Valve assy.	
	1	761 773	4	Screw allen	MC6S M5x30
x)	2	761 109	1	Electro valve	24V
	3	760 120	3	Relief valve	
	4	760 159	2	Flow regulator	
	5	763 366	2	Solenoid	
	6	763 804	2	Cartridge dir valve	
y)	7	762 550	3	Fitting	
	8	756 180	1	Manifold	
z)	9	762 482	2	Fitting	
	10	761 928	4	Screw allen	MC6S M8x80

x) Solenoid: 761 775 (2x); Nut: 763 096 (2x)
y) O-ring: 763 105 (3x)
z) O-ring: 763 107 (2x)

08-04

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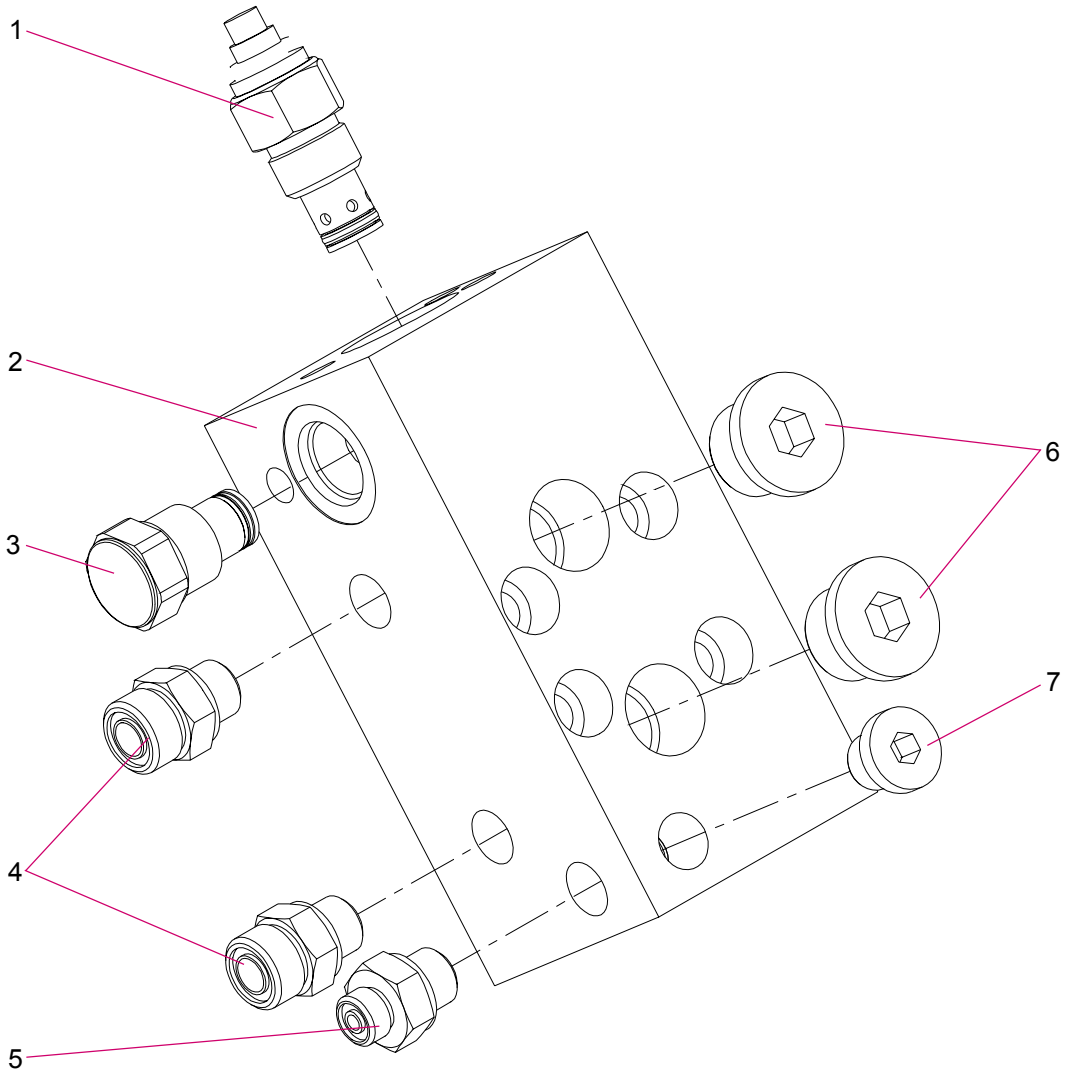
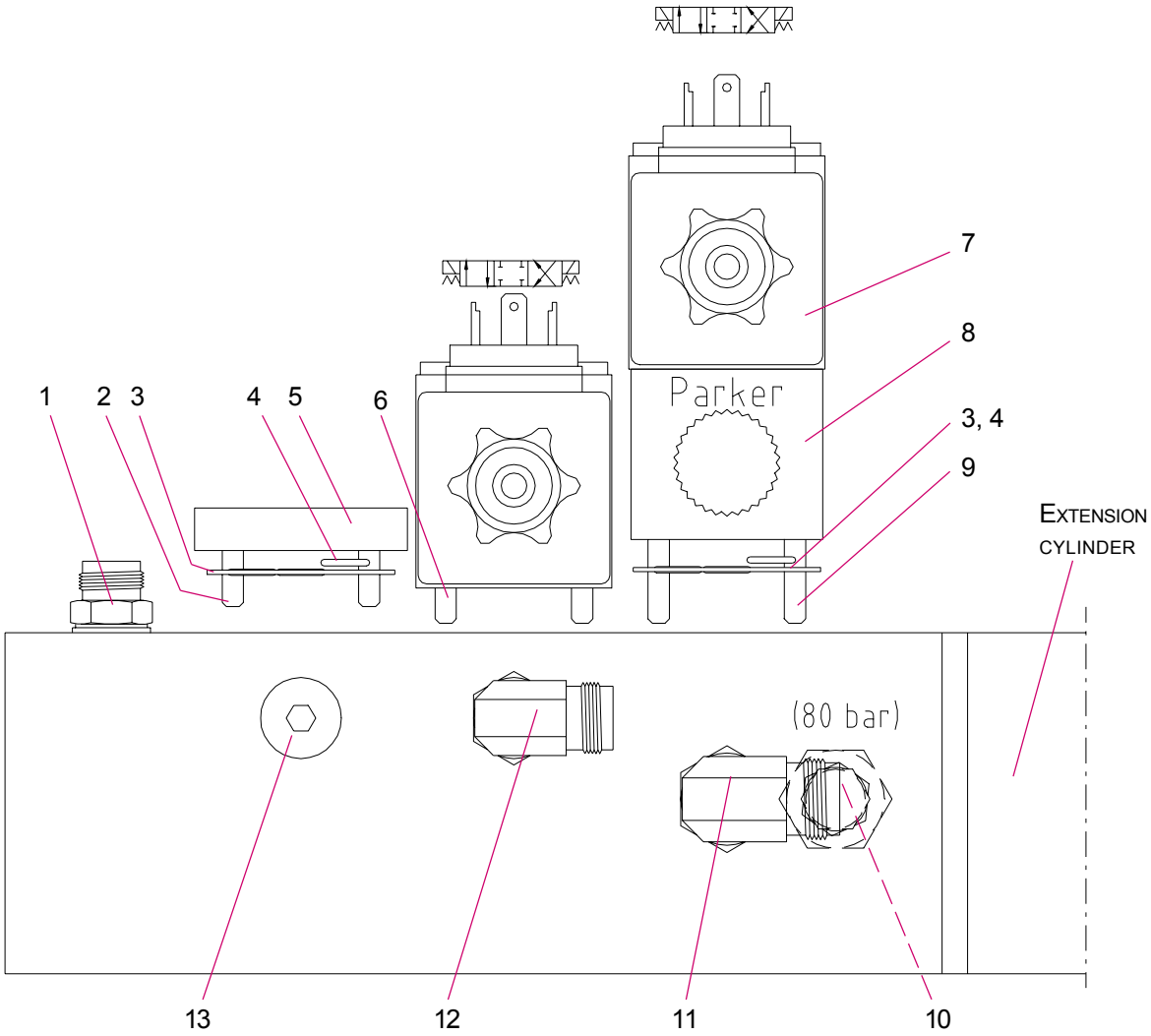


Note	Item	Part no	Qty	Part name
		771 609	1	Valve assy.
	1	763 099	1	Reliefvalve
	2	772 019	1	Manifold
	3	763 098	1	Checkvalve
	4	762 482	2	Fitting
	5	762 592	1	Fitting
	6	761 647	2	Plug
	7	760 738	1	Plug



Note	Item	Part no	Qty	Part name	
	1	762 482	2	Fitting	
	2	761 633	4	Screw allen	MC6S M5x20
	3	761 631	2	O-ring kit	
	4	761 634	2	O-ring plate	
	5	751 176	1	Cover plate	
	6	761 773	4	Screw allen	MC6S M5x30
	7	761 112	2	Electro valve	24 VDc
		761 775	4	Solenoid	
		763 096	4	Nut	
	8	760 895	1	Flow regulator	
	9	760 219	4	Screw allen	MC6S M5x70
	10	760 120	1	Reliefvalve	
	11	762 507	1	Fitting	
	12	762 506	2	Fitting	
	13	760 737	2	Plug	

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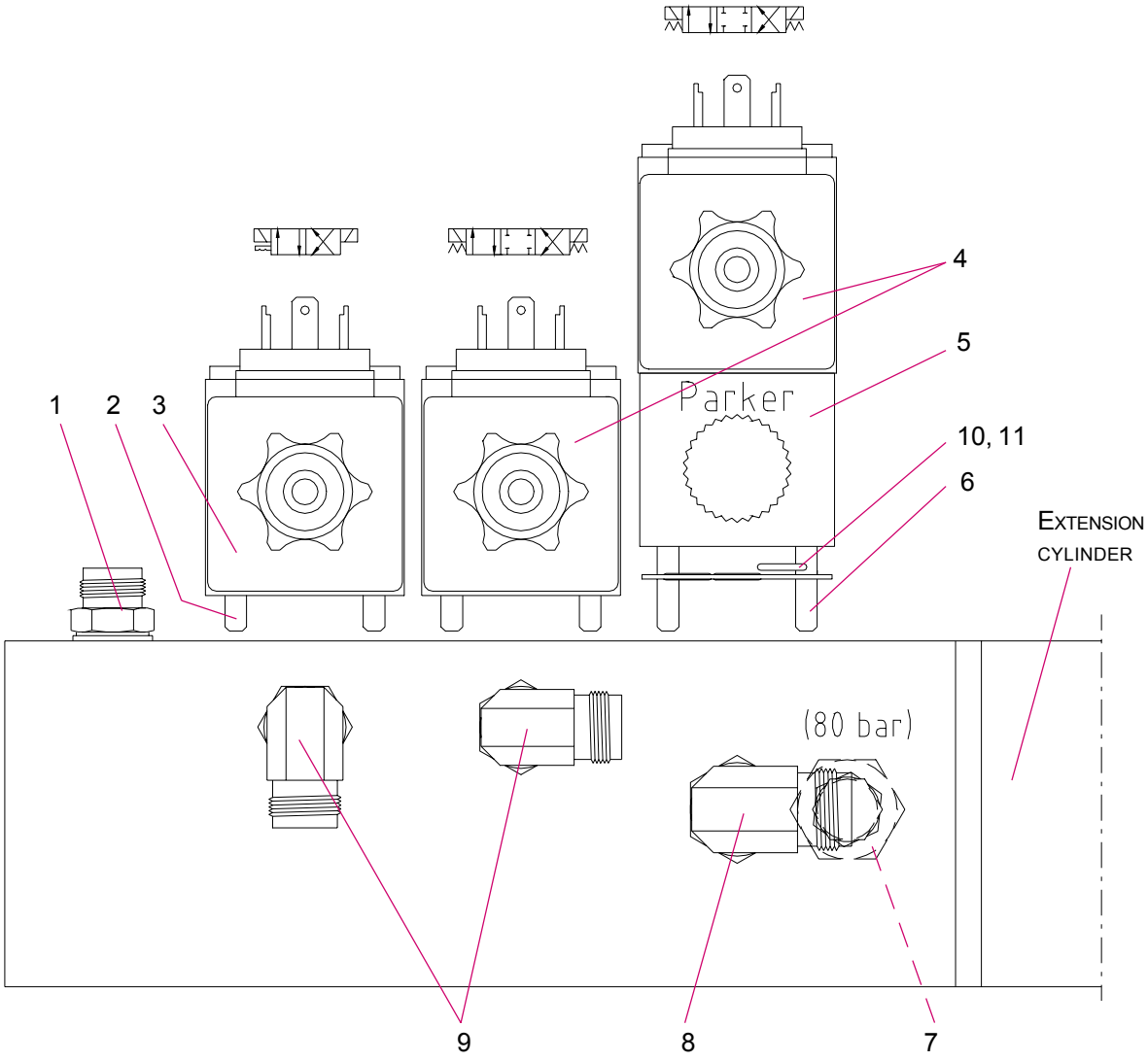
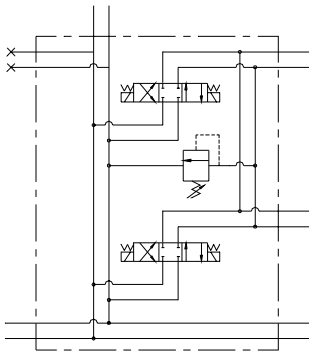
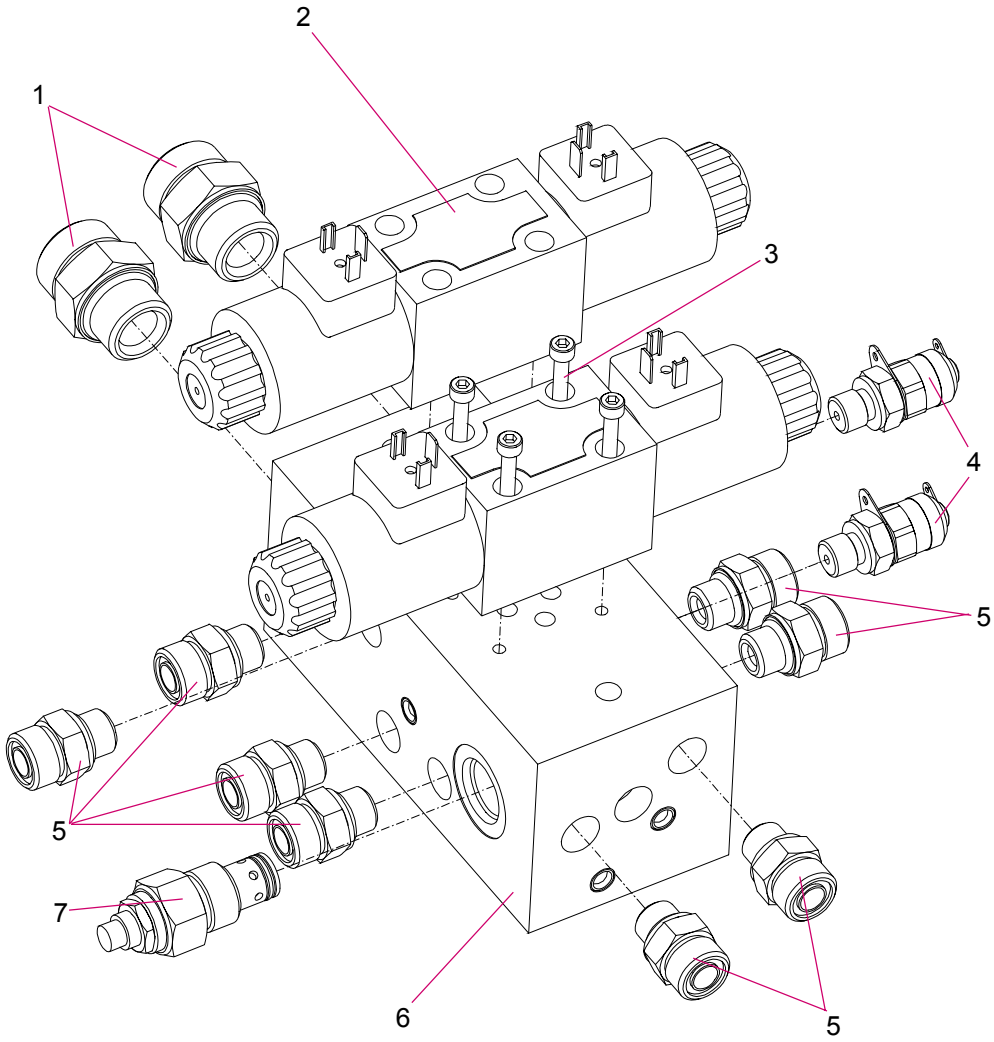


Note	Item	Part no	Qty	Part name	
	1	762 482	2	Fitting	
	2	761 773	8	Screw allen	MC6S M5x30
x)	3	761 492	1	Electro valve	
x)	4	761 112	2	Electro valve	
	5	760 895	1	Flow regulator	
	6	760 219	4	Screw allen	MC6S M5x70
	7	760 120	1	Relief valve	
	8	762 507	1	Fitting	
	9	762 506	4	Fitting	
	10	761 630	1	O-ring plate	
	11	761 631	1	O-ring kit	

x) Solenoid: 761 775 (6x); Nut 763 096 (6x)





Note	Item	Part no	Qty	Part name	
		774 234	1	Valve assy.	
x)	1	762 505	2	Fitting	
	2	761 112	2	Electrovalve	24V
		761 775	4	Solenoid	
		763 096	4	Nut	
	3	761 773	8	Screw allen	MC6S M5x30
	4	760 127	2	Gauge adapter	
y)	5	762 482	8	Fitting	
	6	774 863	1	Valve body	
	7	763 099	1	Reliefvalve	

x) O-ring: 763 109 (2x)
y) O-ring: 763 107 (8x)

05-02

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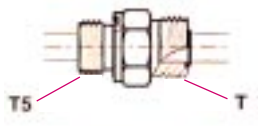
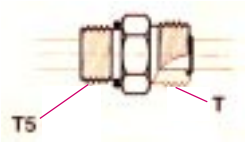
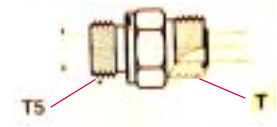
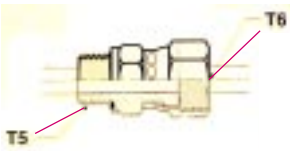
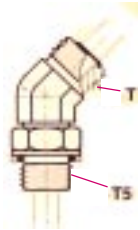
ELME NR	PARKER NAME	THREAD DIM (INCHES)	THREAD DIM (MM)	ORFS STRAIGHT THREAD
		T5,T6	T5,T6	T
Male connector BSPP				
762 625	4F42 EDMLOS	1/8	9,728	9/16-18
762 550	4-4F42 EDMLOS	1/4	13,157	9/16-18
762 592	4-6F42 EDMLOS	3/8	16,662	9/16-18
763 005	4-8F42 EDMLOS	1/2	20,955	9/16-18
762 585	8-4F42 EDMLOS	1/4	13,157	13/16-16
762 482	8F42 EDMLOS	3/8	16,662	13/16-16
762 621	8-8F42 EDMLOS	1/2	20,955	13/16-16
762 722	8-12F42 EDMLOS	3/4	26,441	13/16-16
762 838	10F42 EDMLOS	1/2	20,955	1-14
762 619	10-12F42 EDMLOS	3/4	26,441	1-14
762 505	12F42 EDMLOS	3/4	26,441	1.3/16-12
762 483	12-8F42 EDMLOS	1/2	20,955	1.3/16-12
Male connector UNF				
763 090	8F5 OMLOS	3/4-16		13/16-16
762 623	8-6F5 OMLOS	9/16-18		13/16-16
762 618	8-12F5 OMLOS	1.1/16-12		13/16-16
763 119	10-12F5 OMLOS	1,1/16-12		1-14
762 617	12F5 OMLOS	1.1/16-12		1.3/16-12
Male connector Metric				
762 566	6M14F82 EDMLOS		M 14x1.5	11/16-16
Swivel male connector BSPP				
762 622	8F642 EDMLS	3/8	16,662	13/16-16
763 036	8-4F642 EDMLS	1/4	13,157	13/16-16
762 620	10F642 EDMLS	1/2	20,955	1-14
Male elbow BSPP 45°				
762 639	4-4V4 OMLOS	1/4	13,157	9/16-18
762 509	8V4 OMLOS	3/8	16,662	13/16-16
762 638	10-12V4 OMLOS	3/4	26,441	1-14
762 637	12V4 OMLOS	3/4	26,441	1.3/16-12
Male elbow BSPP 90°				
762 632	4C4 OMLOS	1/8	9,728	9/16-18
762 506	4-4C4 OMLOS	1/4	13,157	9/16-18
762 507	8C4 OMLOS	3/8	16,662	13/16-16
762 673	8-4C4 OMLOS	1/4	13,157	13/16-16
763 016	8-8C4 OMLOS	1/2	20,955	13/16-16
762 629	10-12C4 OMLOS	34	26,441	1-14
762 627	12C4 OMLOS	3/4	26,441	1.3/16-12
Male elbow UNF 90°				
762 626	12C5 OMLOS	1.1/16-12		1.3/16-12
Swivel nut elbow 90°				
762 631	4C6 LOS	9/16-18		9/16-18
762 630	8C6 MLOS	13/16-16		13/16-16
762 628	12C6 MLOS	1.3/16-12		1.3/16-12

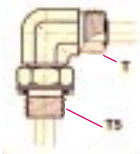


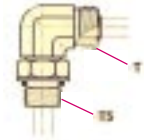


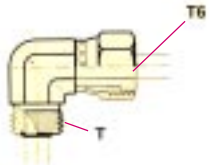












05-02(04-99,12-98)

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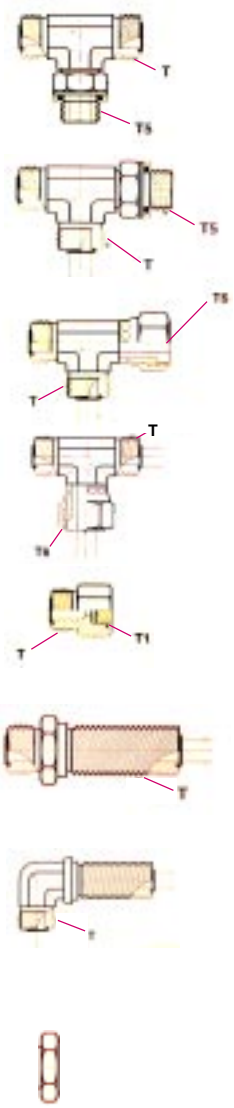
ELME NR	PARKER NAME	THREAD DIM (INCHES)	THREAD DIM (MM)	ORFS STRAIGHT THREAD
		T1,T5,T6	T1,T5,T6	T
Male branch tee BSPP				
762 634	8S4 OMLOS	3/8	16,662	13/16-16
Male run tee BSPP				
762 633 762 724	8R4 OMLOS 12R4 OMLOS	3/8 3/4	16,662 26,441	13/16-16 1,3/16-12
Swivel nut run tee				
762 635 762 773	8R6 MLOS 12R6 LOS	13/16-16 1,3/16-12		13/16-16 1,3/16-12
Swivel nut branch tee				
762 636	8S6 MLOS	13/16-16		13/16-16
Pressure gauge fitting				
762 640	4-4G4 MLOMOS	1/4	13,157	9/16-18
Bulkhead union (without bulkhead locknut)				
762 643 762 641 763 116 763 003	4W LOS 8W MLOS 10W MLOS 12W MLOS			9/16-18 13/16-16 1-14 1,3/16-12
Bulkhead union 90° elbow (without bulkhead locknut)				
762 644 762 642	4WE LOS 8WE MLOS			9/16-18 13/16-16
Bulkhead locknut				
762 646 762 645 763 117 763 004	4W LNLS 8W LNLS 10W LNLS 12W LNLS			9/16-18 13/16-16 1-14 1,3/16-12



O-ring for Parker fittings ORFS male

ELME NR	SIZE	ORFS STRAIGHT THREAD	DIMENSION (MM)
763 105	-4	9/16-18	7,65 x 1,78
763 107	-8	13/16-16	12,42 x 1,78
763 108	-10	1-14	15,6 x 1,78
763 109	-12	1,3/16-12	18,77 x 1,78

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See **table and following example** part no 632 550

6	the first digit specifies a hydr. steel braid hose with Parker fittings
3	the second digit specifies hose dimension (**hose 3/8"**)
2	the third digit specifies fittings (**Triple-lok JIC 37**)
5	the fourth digit specifies the hose´s cut length in **100 cm**
5	the fifth digit specifies the hose´s cut length in **10 cm**
0	the sixth digit specifies the hose´s cut length in **cm**

= Hydraulic hose, 3/8", fitting straight/90, 550cm

***First* digit is always** 6

***Second* digit spec.**

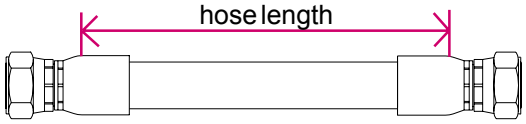
1	*hose 1/4" + 4-4 cpl*
2	*hose 1/4" + 5-4 cpl(only JIC)*
3	*hose 3/8"*
4	*hose 1/2"*
5	*hose 5/8"*
6	*hose 3/4"*

Third digit spec.

	TRIPLE-LOK JIC 37		*O-LOK ORFS*
1	straight-straight	4	straight-straight
2	straight-90 degr.	5	straight-90 degr.
3	straight-45 degr.	6	straight-45 degr.
7	90 degr.-90 degr.	8	special
8	special	9	90 degr.-90 degr.

0 = no fittings, only hose

***Fourth to sixth* digit spec. cut length in cm**



HYDRAULIC HOSE / METER

Parker no.	ELMEno.	Description
491-04	762 116	hose 1/4"
441-06	762 128	hose 3/8"
461-08	762 115	hose 1/2"
461-10	762 114	hose 5/8"
461-12	762 120	hose 3/4"

FITTINGS ONLY

TRIPLE-LOK JIC 37

Parker no.	ELMEno.	Description
	Pressure fittings - straight	
16846-4-4	762 017	straight - 1/4" hose
16846-5-4	762 021	straight - 1/4" hose
16846-8-6	762 018	straight - 3/8" hose
16846-8-8	762 019	straight - 1/2" hose
16846-10-10	762 020	straight - 5/8" hose
10646-12-12	762 022	straight - 3/4" hose
	Pressure fittings - 45 degr.	
13V46-4-4	762 023	45degr - 1/4" hose
13V46-8-6	762 024	45degr - 3/8" hose
13V46-8-8	762 025	45degr - 1/2" hose
13V46-10-10	762 026	45degr - 5/8" hose
13746-12-12	762 027	45degr - 3/4" hose
	Pressure fittings - 90 degr.	
13W46-4-4	762 028	90degr - 1/4" hose
13W46-5-4	762 029	90degr - 1/4" hose
13W46-8-6	762 030	90degr - 3/8" hose
13W46-8-8	762 031	90degr - 1/2" hose
13W46-10-10	762 032	90degr - 5/8" hose
13946-12-12	762 033	90degr - 3/4" hose
	Pressure fittings - ext.	
10346-5-4	762 070	ext. straight - 1/4"
10346-8-8	762 335	ext. straight - 1/2"

O-LOK ORFS

Parker no.	ELME no.	Description
	Pressure fittings-straight	
1JC46-4-4	762 608	straight - 1/4" hose
1JC46-8-6	762 603	straight - 3/8" hose
1JC46-8-8	762 604	straight - 1/2" hose
1JC46-12-8	762 725	straight - 1/2" hose
1JC46-10-10	762 600	straight - 5/8" hose
1JC46-12-12	762 599	straight - 3/4' hose
	Pressure fittings - 45 degr.	
1J746-4-4	762 610	45 degr. - 1/4" hose
1J746-8-6	762 607	45 degr. - 3/8" hose
1J746-8-8	763 100	45 degr. - 1/2" hose
	Pressure fittings - 90 degr. short	
1J946-4-4	762 609	90 degr. - 1/4" hose
1J946-6-6	762 612	90 degr. - 3/8" hose
1J946-8-6	762 606	90 degr. - 3/8" hose
1J946-8-8	762 602	90 degr. - 1/2" hose
1J946-10-10	762 601	90 degr. - 5/8" hose
1J946-12-12	762 598	90 degr. - 3/4" hose
	Pressure fittings - 90 degr. long	
1J146-8-6	762 611	90 degr. - 3/8" hose
1J146-8-8	762 605	90 degr. - 1/2" hose

12-04(08-04,06-04,09-03,10-02,05-02,02-02,03-99,12-98)

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SECTION

F

ELECTRICAL PARTS

ELME SWEDISH SPREADER SYSTEMS
ELMHULTS KONSTRUKTIONS AB

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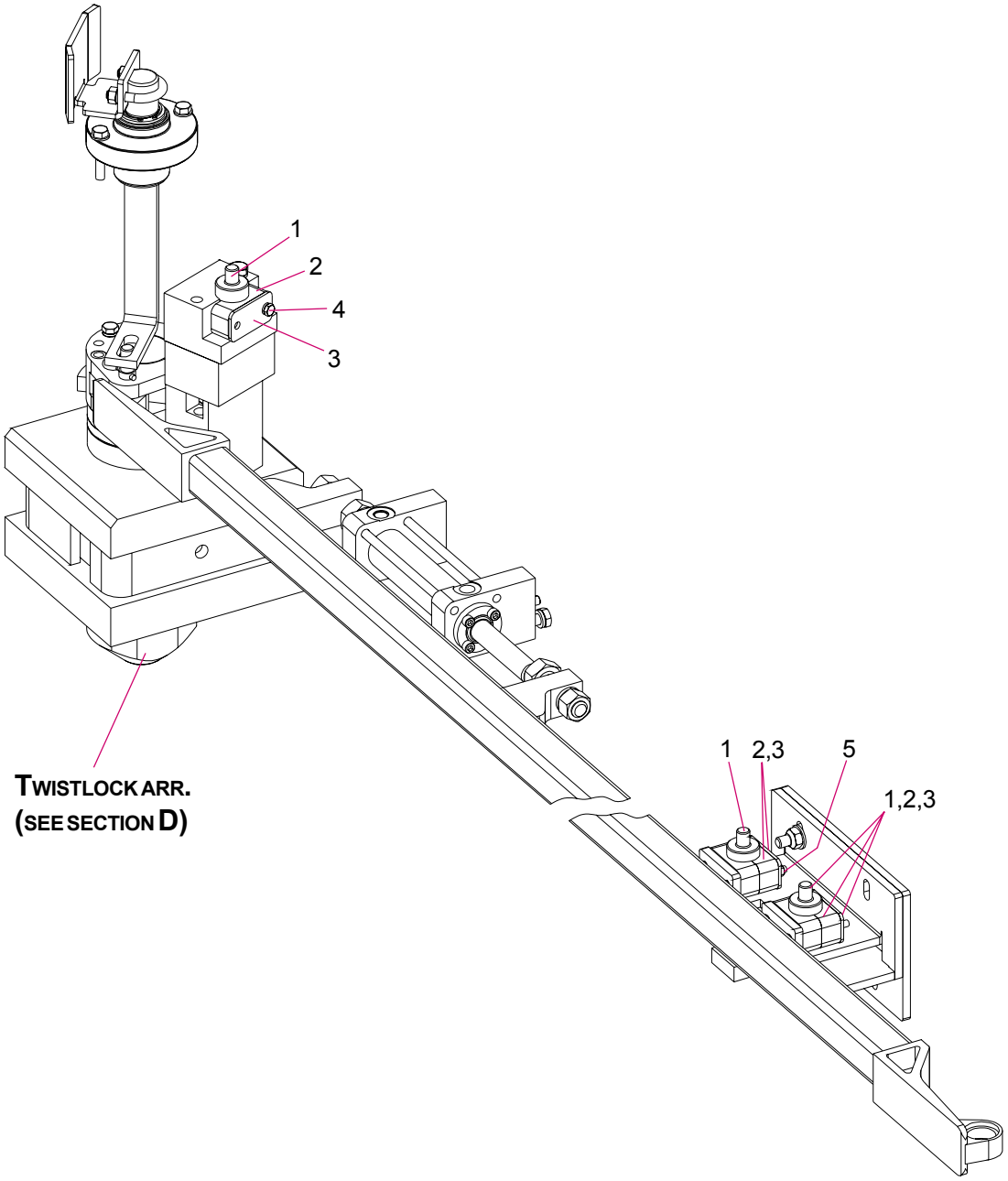

Multiply Qtys by 2 for a complete spreader.

Note	Item	Part no	Qty	Part name	
	1	761 491	4	Sensor	
	2	761 897	4	Clamp	
	3	762 849	4	Top plate	
	4	760 907	4	Bolt	M6S M6x35
		760 585	4	Washer	M6 Nordlock
	5	760 908	4	Bolt	M6S M6x60
		760 950	4	Nut	M6 Locking

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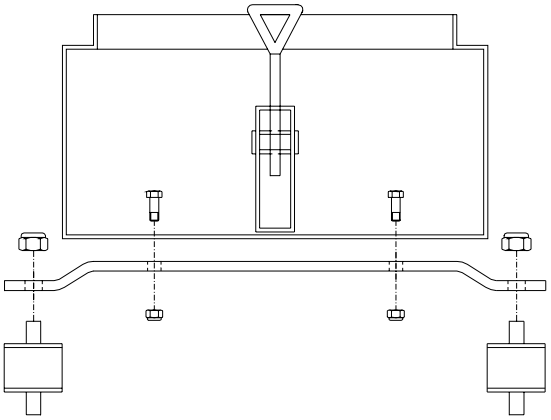
CABLE ASSY., INTERFACE BOXES, PRINTED CIRCUIT BOARD,
CHASSI HOUSING,ETC - **SEE WIRING DIAGRAM SECTION C**

ELECTRIC BOXES FOR TRUCK SPREADERS

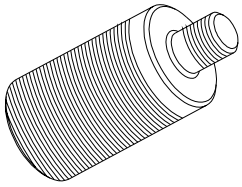
SPREADER BOX (EMPTY)	**777 354**
ROTATOR BOX (EMPTY)	**777 355**

BRACKET	**774 034**	
SHOCK ABSORBER	**760 587**	M8
NUT	**760 919**	M8 LOCKING
WASHER	**760 555**	M8 NORDLOCK
BOLT	**761 389**	M6x40
NUT	**760 950**	M6 LOCKING

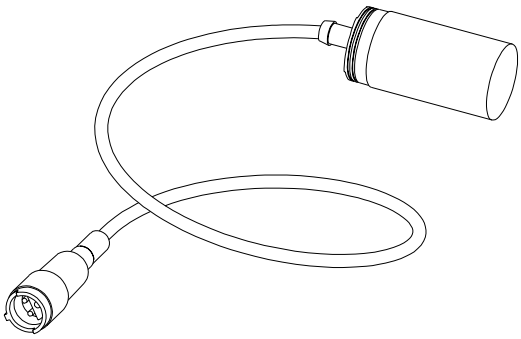


SENSORS

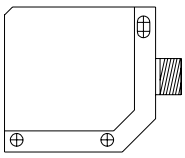
SENSOR	**762 446**	12 MM
SENSOR	**762 680**	18 MM
SENSOR	**762 527**	30 MM
ULTRA SONIC PROXIMIT SWITCH	**763 223**	18 MM



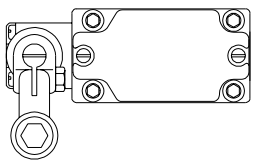
SENSOR KIT WITH 3-PIN CONNECTOR	**791 187**	12 MM
SENSOR WITH CABLE AND CONNECTOR	**761 454**	18 MM
SENSOR WITH CABLE AND CONNECTOR	**761 491**	30 MM
ULTRA SONIC PROXIMIT SWITCH -		
- WITH CABLE AND CONNECTOR	**782 654**	18 MM



PHOTOELECTRIC SENSOR	**763 191**
PHOTOELECTRIC SENSOR WITH CABLE	**763 776**

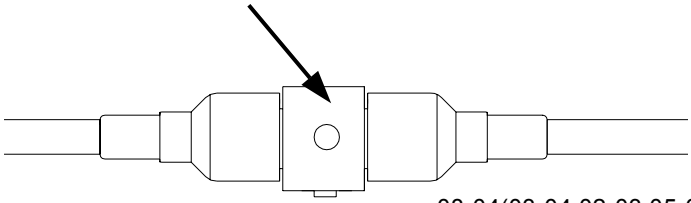


SWITCH	**761 523**
- ARM	**761 524**



COVERS

COVER 3-POLE	**762 133** (YELLOW)
COVER 10-POLE	**761 478** (BLACK)



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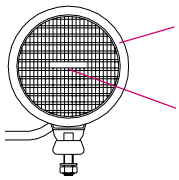
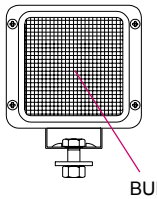
WORKING LIGHT

WORKING LIGHT (ROUND) **771 956** (ASSEMBLY NO.)

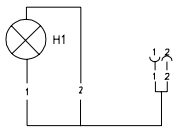


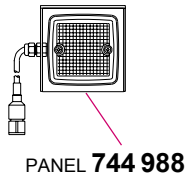


WORKING LIGHT (SQUARE) **763 757** (ASSEMBLY NO.)

INDICATOR LIGHT ASSY. FOR 1 LIGHT.

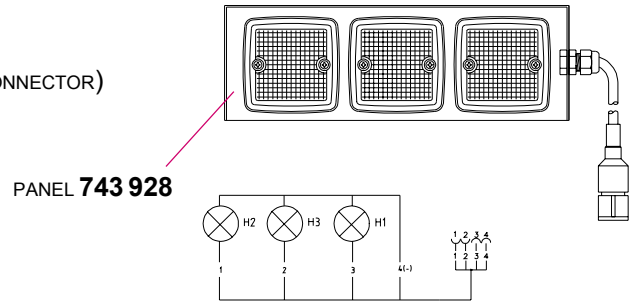
COLOURS		ASSEMBLY NO. (INKL. CABLE)
YELLOW	**772 602**	RIGHT
YELLOW	**772 808**	LEFT





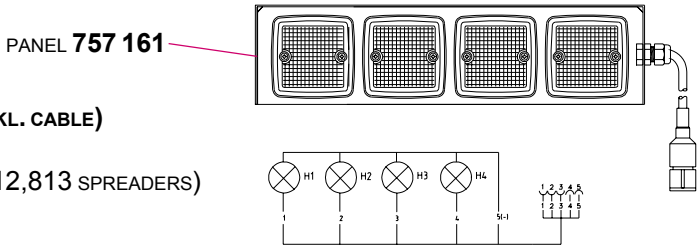
INDICATOR LIGHT ASSY. FOR 3 LIGHTS. COLOURS FROM LEFT TO RIGHT

COLOURS	ASSEMBLY NO. (INKL. CABLE)
GREEN, YELLOW, RED	**772 180**
GREEN, YELLOW, RED	**776 207** (WITH 5 POL MALE CONNECTOR)
GREEN, WHITE, RED	**775 433**
GREEN, YELLOW, WHITE	**775 521**
GREEN, RED, WHITE	**772 429**
WHITE, YELLOW, RED	**772 666**
RED, YELLOW, WHITE	**772 432**
RED, YELLOW, GREEN	**772 417**
YELLOW, WHITE, YELLOW	**772 383**



INDICATOR LIGHT ASSY. FOR 4 LIGHTS.

COLOURS FROM LEFT TO RIGHT

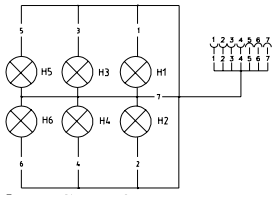


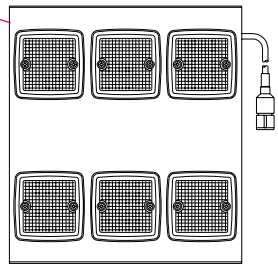
COLOURS	ASSEMBLYNO. (INKL. CABLE)
YELLOW,GREEN,RED,YELLOW	**772 414**
YELLOW,GREEN,RED,YELLOW	**776 177** (FOR 812,813 SPREADERS)

INDICATOR LIGHT ASSY. FOR 6 LIGHTS.

PANEL **746 269**
PANEL **772 255** (FOR 572 SPREADERS)

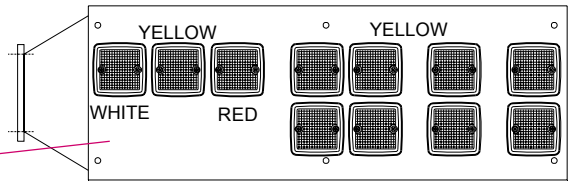
COLOURS	ASSEMBLY NO. (INKL. CABLE)
RED,RED,YELLOW	
GREEN,RED,GREEN	**772 430**
YELLOW, GREEN, RED	
YELLOW, GREEN, RED	**775 128**





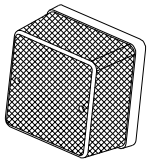
INDICATOR LIGHT ASSY. FOR 11 PANELS

COLOURS	ASSEMBLY NO. (INKL. CABLE)
WHITE,YELLOW,RED	
YELLOW (8X)	**772 784**



INDICATION LIGHT COLOURS.

RED	**761 657**	GREEN	**763 118**
YELLOW	**761 659**	WHITE	**761 658**



BULB **761 707**

08-04(02-04,05-02)

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SECTION

G

SPECIAL PARTS

ELME SWEDISH SPREADER SYSTEMS
ELMHULTS KONSTRUKTIONS AB

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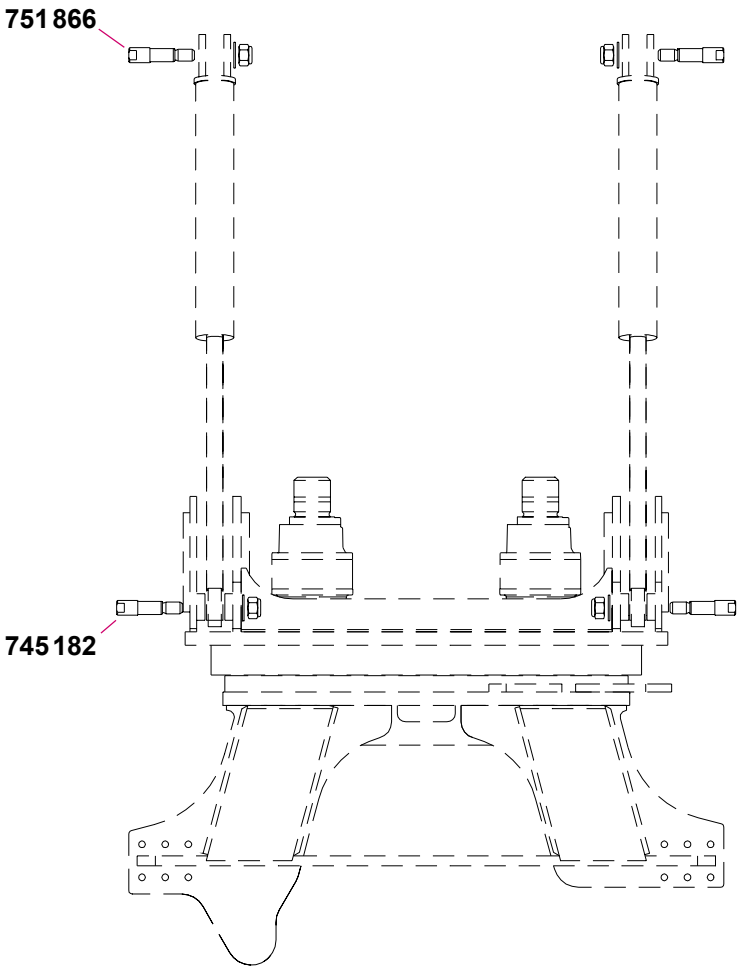
PINS (FOR DAMPING CYLINDER)

- PIN PART NO. 745 182
- PIN PART NO. 751 866
- WASHER PART NO. 760 492
- NUT PART NO. 760 922 M36 LOCKING



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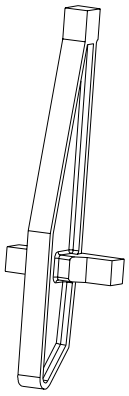
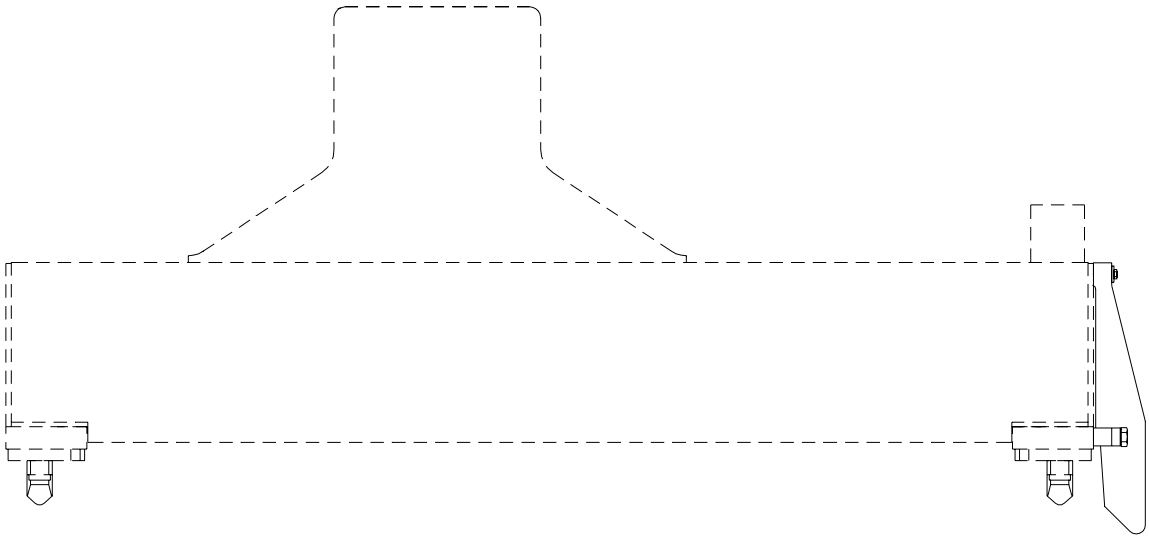
BUMPER PART NO. 754 378
- BOLTKIT PART NO. 791 051





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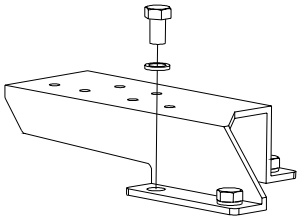
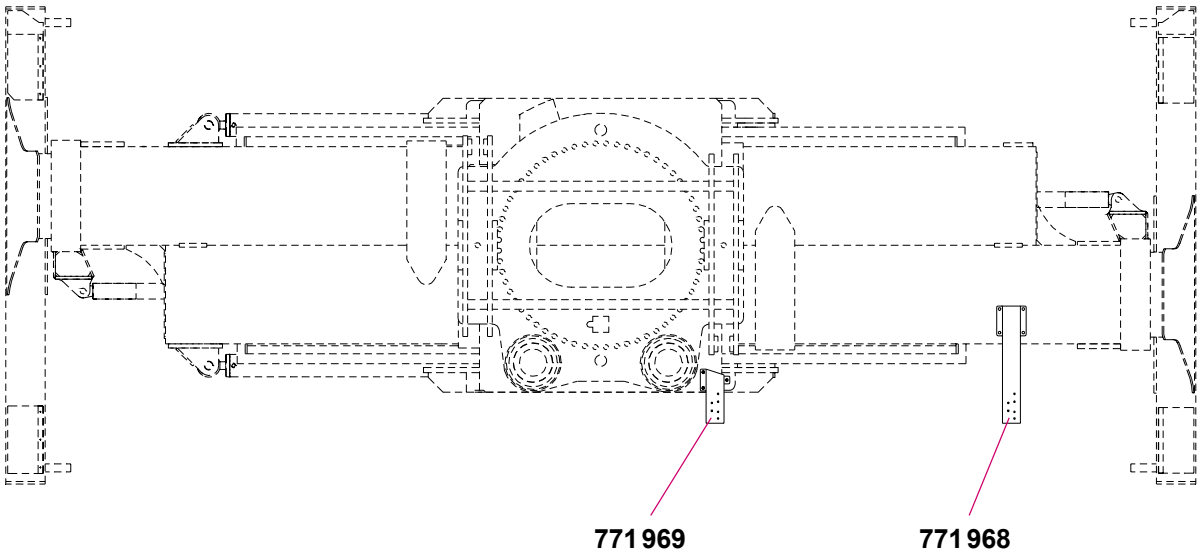
BRACKETS

BRACKET (ON SPREADER)		PART NO.	771 968
BOLT	M6S M10x20	PART NO.	760 967 (4x)
WASHER	M10 NORDLOCK	PART NO.	760 368 (4x)
BRACKET (ON ROTATOR)		PART NO.	771 969
BOLT	M6S M12x20	PART NO.	760 998 (3x)
WASHER	M12 NORDLOCK	PART NO.	760 557 (3x)





06-03(04-03)

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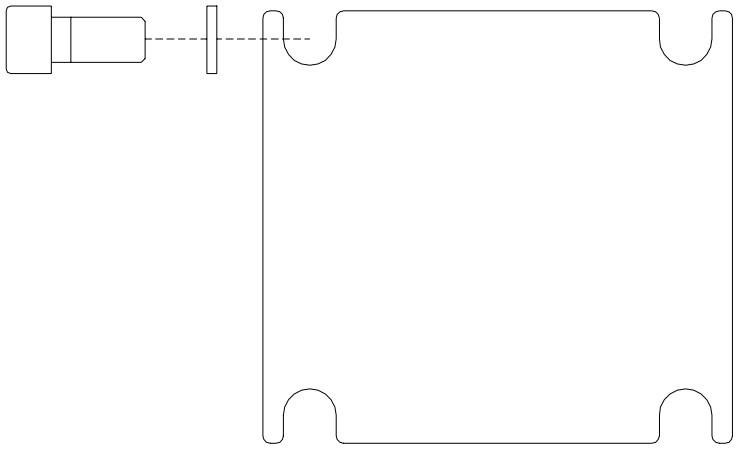
WHEN STOPS ARE NOT FITTED, THIS COVER PLATE IS MOUNTED ON MAIN FRAME

COVER PLATE	PART NO. 744 133
- SCREW ALLEN M6S M12X25	PART NO. 760 915 (4X)
- WASHER M12 NORDLOCK	PART NO. 760 557 (4X)



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